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THE IRRIGATION SERVICE, ITS ORGANIZATION AND ADMINISTRATION.

By

P. M. TOTTENHAM, C.B.E.

Government Press, Cairo, 1927.

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THE REGISTRATION SERVICE
OF THE REGISTRATION AND
ADMINISTRATION

F. M. TOTTENHAM



PREFACE.

The following outline of the methods and work of the Irrigation Service was prepared while the writer was still in Egypt. It has since been brought up to date as regards any important changes, but the bulk of it is general information and has not required to be revised.

It was intended to serve as an answer to enquirers who wished to know where such an account could be found, and who could only be referred either to Willcocks and Craig's monumental *Egyptian Irrigation* or to the very short notice in the Government Almanac. It is fuller than the latter and contains matter that cannot all be found in the former. It will, it is believed, be of use to officials and prospective officials of the Irrigation and some other Departments, while the importance to Egypt of the Service it describes may perhaps make it of some interest to the public.

London, January 4, 1927.

P. M. TOTTENHAM,
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MINISTRY OF PUBLIC WORKS, EGYPT.

THE IRRIGATION SERVICE OF EGYPT, ITS ORGANIZATION AND ADMINISTRATION.

CHAPTER I.

THE HISTORY OF IRRIGATION IN EGYPT.

Particulars are wanting in regard to how the art of Irrigation was practised in Egypt in the days of the Pharaohs. Hieroglyphic records indicate that the men charged with the control of the water supply were high officers of state, but they do not explain their functions or operations, nor do the paintings in their tombs. Mention is made of repairs to great irrigation works, but, among the monuments of Egypt, no ruins of these are left. They may be buried, or have been washed away, or perhaps have been replaced by a succession of similar works on the same sites.

Later history is little more communicative, and what may be called the first precise particulars regarding irrigation from the Nile were placed on record by the body of scientists sent to Egypt by Napoleon. Their maps show that during the flood season the whole country was irrigated by inundation on the basin system, and that perennial irrigation was confined to a few tracts bordering the river and its branches.

Shortly after, under the rule of Mohamed Ali Pasha (1805-1848) and with the aid of French engineers, such as M.M. Mougél and Linant de Bellefonds, important works were begun, especially in Lower Egypt, for the control of the river and its supply, with a view to cotton cultivation. The chief of these was the Delta Barrage.

During the reigns of the Khedives Ibrahim, Abbas 1st and Said (1848-1863), engineering in Egypt continued to be directed by French technicians.

During the reign of the Khedive Ismail (1863-1879), several great irrigation works were undertaken, chief among which was the Ibrahimia Canal in Upper Egypt. This undertaking led to the cultivation of sugar-cane on a large scale. These works also were carried out under the guidance of French engineers. However, their direction was not as effective as it might have been, had they had executive instead of advisory powers. In spite of the construction of New Works, the irrigation system itself seemed to be declining again into the state of torpor from which it had been roused.

In the Introduction to the 1889 Edition of Willcocks' "Egyptian Irrigation," Lieut.-Col. Ross describes the state of affairs in the seventies :—

"There can be no manner of doubt that, up to 1882, Egyptian Irrigation was going down-hill. Every year some false step was taken in spite of the engineer. Every year the Corvée lost ground in its out-turn of work, and drains were abandoned or became useless, and canals became less of artificial and more of natural channels wholly influenced by the natural rise and fall of the Nile. The records of public works hardly existed. Gauges of canals were not taken, or, if taken, were not recorded, and the dates of the erection of the older canal works are in greater doubt than the dates of events in the eighteenth dynasty. Of course, the French engineers were not responsible for this. They could only advise, and their advice, if not grateful to the authorities, was promptly rejected. I, therefore, must deprecate any invidious comparison between the French and the Anglo-Indian engineers. The comparison must be made really between the Arab engineers, advised by French engineers, and the Anglo-Indian engineers directing the Arab engineers.

"It is certain that in the old days there must have been native engineering talent of the very highest order, and when we read of such and such a king restoring public works in a long and glorious reign, there must have existed a continuous supply of good engineering

talent which had *carte blanche* from the ruler of the day. But owing to many causes the native talent has sunk so low that without modern scientific aid the Egyptians could not work their own canals.

“ They have sunk into a dead conservatism, caused, no doubt, by the chronic state of anarchy under which Egypt languished till the great Napoleon broke the spell. Since that time, though the Ecole Polytechnique has educated him well, the Egyptian engineer has always had to subordinate his professional knowledge to the whim of his rulers, and carry on blindly a rule-of-thumb system against his professional instincts.”

In 1883, after the revolt of Arabi Pasha and the subsequent settlement, the prospect began to brighten. An able Prime Minister, such as Nubar Pasha, was seconded by Ministers of Public Works, such as Ali Pasha Mobarek, Abder Rahman Pasha Roushdi and Mohamed Pasha Zaki (1883–1892), and Sir Colin Scott Moncrieff was placed in charge of Irrigation. To assist him, he brought from India Major Ross, Captain Brown and Messrs. Willcocks, Foster and Garstin. The four latter—with Abu Saud Bey were the Inspectors of the five Circles of Irrigation in 1884, with Col. Ross as Inspector-General of Irrigation for Upper and Lower Egypt.

A good outline of the reforms that followed is given by Sir Hanbury Brown, in the Introduction to the second edition of Willcocks :—

“ In 1883 and 1884, when Sir Colin Scott-Moncrieff was organizing the Irrigation Department, the first thing his staff had to do was to arrest decay and prevent things going from bad to worse, at the minimum expenditure possible, and with no records of past experience to guide them.

“ Next, as knowledge increased, what was bad had to be made good; and the Western practice of repairing existing works was one of the first novelties introduced to take the place of the Eastern practice of letting works, once constructed, take care of themselves. Ruins of earthworks and masonry buildings were restored and made to perform their duties; hopeless wrecks of native inspectors and chief engineers, unfit for the open sea of profitable service, were towed into port and left there. The native officials of the subordinate staff who survived the stress of reform, learnt that they were paid for work; and they also were made to perform their duties and move about their districts—another startling novelty.

“ Then, when fuller experience of the country had been gained by the new reformers, came the period of remodelling and making crooked ways straight, both materially and morally: defects (by no means all) in the system of canals and drains were removed, the cross-section and grading of canals and banks were adapted to their objects, and extensive alterations to masonry works were carried out to make them work with more efficiency and less expenditure of human labour.

“ And, at last, when the Nile supply had been made to do the maximum work that could be got out of it, and the beneficial effects of repairs of works, remodellings of canals, perfecting of the means of irrigation, and just distribution of water had been made evident in increased crops and general prosperity, and there seemed to be little for the natural experience of the reformed Department to operate upon within the limits imposed by the ordinary budget allotments, a new prospect of development was opened in a vista of new works. Large sums of money were given by the Commissioners of the Caisse de la Dette from the general reserve fund for extending the drainage system of Lower Egypt; the same body in 1898 granted L.E. 530,000 to be spent in a period of four years on two new weirs to be built below the old barrages; and in the same year, a financial arrangement and contract were concluded in virtue of which the Aswân Dam and the Asyût Barrage are to be built within the next five years.”

In 1892, Sir C. S. Moncrieff retired and was succeeded by Sir W. Garstin who was successively Under-Secretary of State and Adviser until 1908. Throughout practically the whole of this time, Hussein Pasha Fakhry was Minister of Public Works and, as may be shown by an enumeration of the principal works undertaken, it was a period of extraordinary progress.

The reservoir projects were studied (1890–1894), the great remodelling of the Upper Egypt basin system was completed (1892), the Mex Pumping Station began to work (1893), the foundations of the Delta Barrage were grouted (1896–1897), flood and spring rotational supply was introduced (1896), the improvement of the drainage system of Lower Egypt was begun on a large scale (1897), the chain of basins west of the Bahr Yusefi was created (1899), the examination of the Upper Nile in the Sudan was begun (1900), the Delta Barrage

weirs were constructed (1901), the Giza Irrigation system was extensively remodelled (1901), the major improvement of the drainage of the Delta was completed (1901), the Aswân Dam and Asyût Barrage came into operation (1902), the Zifta Barrage was completed (1903), the Sudan Irrigation Branch was created (1904), the remodelling of the Faiyûm canal and drainage system was completed (1905), Esneh Barrage was begun (1905), Protective Works were carried out at Aswân Dam (1904-1906), and the heightening of Aswân Dam was begun (1907).

From 1908 to 1920 the Minister of Public Works was Sir Ismail Sirry Pasha. Sir William Garstin's successors were Sir A. L. Webb, Mr. C. E. Dupuis (1909-1912), and Sir Murdoch MacDonald (1912-1921). During this period progress was interrupted by the Great War and its after effects, as the following particulars show. The heightening of Aswân Dam and the construction of Esneh Barrage were completed. The augmented reservoir at Aswân came into service for the first time in 1913. The Middle Egypt Basins, from Deirût to the Delta Barrage, were converted to perennial irrigation, and extensive works were begun for the improved drainage of the Central Gharbia and Western Beheira areas of Lower Egypt. These latter works were begun in 1912, but the War intervened and they had to be rounded off on a modified plan in 1917. Just before the War two other undertakings were begun: the construction of the Sennar Dam and canalization of the Gezîra, and the creation of a reservoir on the White Nile by means of a dam at Gebel Aulia. Both enterprises were subsequently retarded, but work on the former was actively resumed as soon as it was possible. Mention should be made of far-reaching and very beneficial administrative reforms introduced towards the beginning of the period under review, and of two Nile Projects Commissions that were appointed during the latter part of it, and that studied, and reported on, the requirements of Irrigation in Egypt and the Sudan.

From 1920 onwards was a period of political change, during which the Irrigation Service was adapting itself to new conditions. In 1920 Mohamed Shafik Pasha became Minister for Public Works. In 1921, the writer became the next and last on the list of British Officials that have been mentioned above. In 1922 the first Egyptian Under-Secretary of State was appointed, namely Abd el Hamid Suliman Pasha, who shared the duties of the position with the writer, and afterwards became Minister. In 1924 Morcos Hanna Pasha was Minister and Osman Moharram Bey the Egyptian Under-Secretary. Morcos Pasha was succeeded by Mahmoud Sidki Pasha, and Osman Bey by Saleh Enan Pasha. Early in 1925 Sir Ismail Sirry Pasha again became Minister, and, on the writer's retiring, Saleh Enan Pasha remained sole Under-Secretary, a post of Assistant Under-Secretary being filled by Hussein Sirry Bey.

This period saw the completion of work on the Sennar Dam; the finishing ceremony was performed at the beginning of 1926. Interrupted preparations for the Gebel Aulia Dam were resumed, and money has recently been granted again for dredging in the Sudd Region, an operation that forms part of the general scheme for supplying Egypt with more water in summer.

CHAPTER II.

DESCRIPTION OF THE IRRIGATION SYSTEM.

The Regimen of the Nile.

Egypt is a practically rainless country and its agricultural prosperity is therefore dependent upon the waters of the Nile. The river derives its supplies from the heavy rains of the countries to the south of Egypt. Corresponding with the alternations of rainy and dry seasons in the Sudan, Abyssinia and Uganda, which form the collecting basins of the Nile, there is an annual rise and fall of the river level in Egypt. At Cairo the Nile commences to rise in July, reaches its greatest height (about 4·00 metres above its lowest level) towards the middle of September and falls to its minimum stage in May. The discharge of the river past Cairo varies from about 380 cubic metres per second at the lowest stage to about 10,000 cubic metres per second at the height of the flood, the low stage supply being mainly derived from the White Nile, and the flood chiefly from the Blue Nile. Though the irrigated area of Egypt is but 0·8 per cent of the Nile's catchment area, it absorbs at low stage the whole available supply of the river and even then this is inadequate. Storage works are therefore essential to enable the low stage supply to be increased.

The aim of the Irrigation Service is partly to confine the river in flood between its banks, and distribute the available supply of the Nile to all parts of the irrigated area, but also to equalize the flow of the river throughout the year by means of storage reservoirs and other conservation works.

The Irrigated Area.

The total area of Egyptian territory is about one million square kilometres. Of this but 1/30th, or approximately six and a half million feddâns, is cultivable, not including the lakes (660,000 feddâns) which may eventually be reclaimed. The remainder is desert. The cultivated area is 5,300,000 feddâns (approximately) of which some 4,000,000 are perennially irrigated and the remainder, about 1,300,000 feddâns, receive flood, or basin, irrigation, or one flooding per annum, and produce one crop; whereas the 4,000,000 feddâns, which are watered throughout the year, produce two or occasionally three crops per annum.

From Aswân to Cairo (approximately 880 kilometres by rail and 946 kilometres by river) the Nile Valley is comparatively narrow, and flat strips of alluvial deposit of varying widths lie on one or both sides of the river and between it and the Nubian or Libyan deserts on the East and West, the average width being about 10 kilometres. At 20 kilometres North of Cairo, the cultivated area spreads out east and west and forms the Delta, whose apex is at the Delta Barrage. The sides of the Delta measure approximately 175 kilometres and the length of the base, *i.e.*, coastline, is 250 kilometres. At the Barrage, the Nile bifurcates into the Rosetta (west) and the Damietta (east) branches and so reaches the sea.

Upper Egypt extends from near Wadi Halfa to Cairo. The northern part of this long strip of territory is, however, sometimes described as Middle Egypt. From Wadi Halfa to Aswân, the cultivation is extremely limited. From Aswân to Asyût, irrigation is on the basin system. In Middle Egypt or from Asyût to Cairo, including the semi-oasis called the Faiyûm Province, irrigation is chiefly perennial. Lower Egypt, or the Delta, is entirely irrigated on the perennial system.

The major works for control of the Nile are the Aswân Dam and the Esna, Asyût, Delta and Zifta Barrages. It is intended to build another barrage at Nag Hamadi between Esna and Asyût.

Water Supply.

THE BASIN AREAS.

The supply to the Upper Egypt basin system is partly provided by means of (*a*) the Asfûn (west bank) and Kilabia (east bank) flood canals, whose levels are controlled by the Esna Barrage, 170 kilometres north of Aswân, and (*b*) the Ibrahimia Canal (west bank)

whose levels are controlled by the Asyût Barrage, 385 kilometres north of Esna. By manipulating the sluice gates of these barrages, the flood levels of the Nile are raised as required to enable these canals to draw from the river, when their waters are conveyed to the basin, or chain of basins, dependent on them. Secondly and independent of the Esna and Asyût Barrages there are many large feeder canals between Aswân and Asyût which take direct from the river and supply basin systems on either bank; however, they can only draw such supply as the natural level of the Nile in flood allows. By means of these various canals, the flood waters are led into the 212 basins of Upper Egypt, whose area in feddâns varies from 370 to 75,400 (the average being 6,800), and which are surrounded by banks, except where they abut on the desert. These banks are pierced with regulators designed to pass the water from basin to basin, the bank of the tail basin being pierced with an escape which discharges the water when the basin, or chain of basins, is due to be emptied.

The water spreads out over the basins until they are filled: it stands a few days in the tail basin and is then run off through the regulators and escapes to the Nile, whose flood levels are falling. On the muddy surface of these basin areas are sown such crops as wheat, barley, beans and clover. They require no waterings, and the three first-named are reaped in the spring, after which the land remains fallow until the following August, unless other crops are grown with water lifted out of wells in the basins themselves, or out of the Nile by means of pumps. The dates fixed for opening the basin canals are (Aswân) August 5, (Qena) August 8, (Girga) August 14, (Asyût) August 18–22, (Minya) August 10–25 and (Beni Suef and Gîza) September 4. The higher-lying portions of these basins near the Nile are often separated from the main basins by small banks and irrigated perennially, mainly by pumps on the Nile. When the flood is too low, and land is not inundated, it is called “Sharaqi” and land taxes are remitted.

MIDDLE EGYPT.

The supply to the Middle Egypt perennial system, which lies on the West of the Nile between Asyût and Cairo and includes the Faiyûm Province, is provided by means of the Ibrahimia Canal, whose levels are controlled by the regulation of the Asyût Barrage. At Deirût, 62 kilometres north of Asyût, the supply of the Ibrahimia Canal is diverted into other main canals which are controlled by means of regulators at their heads and at intervals along their courses. Above these regulators, branch and distributary canals take off. All these canals are public channels maintained by Government and they serve to carry and distribute supply throughout the irrigated area as far as the Delta Barrage.

By means of outlets, of sizes authorized by the Irrigation Service, the water is drawn off from these public channels and enters private canals and water courses. From these latter, by means of pipes or cuts in the banks, opened and closed by the cultivators, the water is run on to the fields in accordance with the needs of the crops. Throughout practically the whole of the Ibrahimia Canal system, water is delivered by gravitation or free-flow. It has not to be lifted on to the fields.

The supply to the very limited area of cultivation on the eastern side of the valley between Asyût and Cairo is mainly by private lifting machines, but in Gîza Province it is provided by Government Pumping Stations, lifting water direct from the Nile at Koreimat and El Leissi.

LOWER EGYPT.

The supply to the Lower Egypt perennial system is provided by means of the Rayah Behera, serving the Province of Behera; the Rayah Menûfiya, serving Menûfiya and Gharbîya; and the Rayah Tawfiqi, serving Sharqîya and Daqahliya. Three other canals (nearer Cairo), the Ismailia, Sharqawiya and Bassussia, serve Qalyûbiya and part of Sharqîya; branches of the Ismailia Canal extend to Port Said and Suez. The levels of all these canals are controlled by the Delta Barrage which spans the heads of the Rosetta and Damietta Branches of the Nile close to their bifurcation.

The Zifta Barrage, 90 kilometres north of the Delta Barrage (Damietta Branch), is used at certain periods to supplement the supplies of the Rayahs Menûfiya and Tawfiqi in their lower reaches.

The six arterial canals serving the Delta are controlled by regulators at their heads and at approximately every 15–20 kilometres down their courses. Above these regulators, branch and distributary canals take out, and distribution of supply is as described for the

Ibrahimia Canal perennial system. Main Canals may serve from 200,000 up to 1,000,000 feddâns (the average being 400,000 feddâns); branch canals from 20,000 up to 200,000 feddâns (the average being 40,000 feddâns) and distributary canals from 500 up to 25,000 feddâns (the average being 5,000 feddâns).

The main difference between perennial irrigation in Middle and Lower Egypt or that part of it lying near the apex of the Delta, is that, during low stage, it is often impossible to deliver the supply by free-flow, consequently pumps and other forms of lifting machines, authorized by the Irrigation Service, have to be employed to lift the water out of the public into the private channels.

SUPPLEMENTARY SUPPLIES.

Although the natural discharges of the river suffice for all needs during the flood and winter months, those of the spring and summer months are generally inadequate to summer crop requirements, or, from April until the latter half of July, when the rising flood supplies all needs again. The function of the Aswân Dam is to supplement the supply during this period of shortage. The reservoir is filled by retaining a portion of the clear water of the river when its flow is in excess of requirements—generally between November and February. The volume so impounded (2,500,000,000 cubic metres)* is stored until April, and then drawn upon as required. In the 133 lowest days of a low year, the water stored at Aswân increases the river's supply by about 35 per cent.

A further addition to the low stage supply is provided by means of earthen dams constructed annually across the Rosetta and Damietta Branches near the sea. They impound spring water draining into these channels, and also prevent the salt sea-water from mingling with the fresh, and rendering it unfit for irrigation. When the demand is greatest, in June and July, water is pumped into the canals from the pools thus formed, or runs by gravitation into canals near Rosetta and Damietta.

An addition to the supply provided by the canal system is obtained from subterranean sources by means of lifting machines on privately owned wells. Such wells are mostly found in the higher lying districts of the Delta. Below R.L. 4·00, the subterranean supply is generally salty.

DISTRIBUTION OF SUPPLY (RIVER).

When the Nile is carrying an ample supply, or, from August to March, the canal systems throughout the country draw from the river the volumes the crops require, as much water as possible is stored at Aswân and the surplus passes into the Mediterranean Sea.

When the supply is limited, generally from April to the end of July, distribution is as follows. Late in February of each year, a forecast is made of the volumes the river is expected to give during the low stage period, and also of the requirements of summer crops for both Upper and Lower Egypt. A programme of supply from Aswân Reservoir is then prepared for the coming low stage and is subsequently adjusted periodically, with corresponding expansion of the rice area or extension of the periods between waterings of crops, as the Nile gauges in the Sudan show the river levels to be varying in a favourable or unfavourable direction from those of the forecast. If the expected supply is less than the summer crop requirements, it is arranged that Upper and Lower Egypt shall share the volumes available in accordance with their respective areas of summer crops. If the supply is expected to exceed the summer crop requirements of Upper and Lower Egypt, the volume required for these is earmarked, and the surplus is devoted to the cultivation of summer rice in Lower Egypt, the area varying with the extent of the surplus. A portion of the volume stored at Aswân is reserved to be used in anticipating the flood, in case it should be very late in arriving.

In the application of the programme, Upper Egypt draws off daily for the Ibrahimia Canal at Asyût her share of the total daily volume discharged downstream of the Aswân Dam, and the remainder passes on to Lower Egypt to be divided between the four Circles of Irrigation, the total supply to each being in accordance with its summer crop area and, in addition, its authorized share of the volume available for summer rice.

As soon as the flood arrives and supply is once more ample, proportional distribution is discontinued and canal systems draw as they require.

* 2,698,000,000 m³ with reservoir gauge R.L. 113·60 and Halfa gauge 1·00.

DISTRIBUTION OF SUPPLY (CANALS).

Throughout the year, water is distributed to the canal systems by rotation, the period of supply to each channel varying with the demand of the crops in the ground at the time. The rotation generally adopted is 5 days of full supply alternating with 10 days of reduced, or no supply; this allows of a watering once in 15 days. Between April and August, when the supply is generally limited, the rotation programme consists of 6 days supply in every 18, 21 or 24 days in the cotton zones, and 4 days in every 8 or 10 days in the rice zones, the period between waterings in both cases being according to the supply available.

As the canals are designed to irrigate the whole area commanded in 7 days, and approximately 45 per cent of the gross area is under cultivation in summer, a 4-day period in summer, with the canal running under full supply conditions, would suffice, but is not yet generally adopted, chiefly owing to the limited supplies available, the unsatisfactory state of the canal outlets with liability of waste of water, and the labour difficulties involved in watering in a limited time. When the 4-day period is adopted, it will be possible very largely to do away with the lift irrigation which the 6-day period now renders necessary throughout a large part of Lower Egypt from April until August, and free flow irrigation will then take its place.

Drainage.

THE BASIN AREAS.

The method of draining or emptying the basin areas of Upper Egypt has already been described.

MIDDLE EGYPT.

The drainage, or surplus water, of Middle Egypt runs into the Nile, the Bahr Yusefi or the Rayah Behera. In flood, when the Nile is too high to receive drainage by gravitation, surplus water is either lifted into it by Government pumps or diverted to the other channels mentioned.

The drainage of the Faiyûm Province flows into lake Qarûn, which lies about 40 metres below Mediterranean Sea level, and there evaporates.

LOWER EGYPT.

Facilities for drainage in Lower Egypt are provided only for lands which lie lower than 7 metres approximately above mean sea level, or an area of about 2,300,000 feddâns.

Drainage is effected by a net-work of branch drains aligned in the depressions between the ridges on which the canals and distributaries run. These branch drains discharge into some fifteen main drains, most of which flow freely to the lakes, bordering upon, and connected with the sea.

To this system there are two exceptions: In order to assure adequate drainage, the level of Lake Maryût is maintained at 3 metres below sea level by Government pumps discharging into the sea at Mex. The water entering the lake by means of the main drains serving the western Delta is in excess of the evaporation from the lake surface during the winter season; the pumps then have to work until warmer weather enables 3 metres, or less, to be maintained by evaporation only. The second exception is the drainage of the area surrounding, and comprised in, what was formerly Lake Abukir. Its drainage water is lifted into the sea by Government pumps at Tolombat.

In general it is endeavoured to maintain the water level in all public drains so that it shall be not less than 1.5 metres below ground level throughout the system served.

Pumping Stations.

Where irrigation and drainage on a large scale cannot be provided by gravitation, pumping stations are installed and run by Government. There are four such Government-owned stations for irrigation, and five for drainage. The Mechanical Department of the Ministry of Public Works controls them on behalf of the Irrigation Service, and prepares the specifications and superintends the erection of any new station. The latter Service pays for erection; the cost of running and upkeep, amounting at present to some L.E.1000,00 per annum, is borne by the Mechanical Department.

Flood Protection.

The Nile flood lasts from August to November and reaches its highest level at Aswân in September. It is caused mainly by heavy rainfall in the highlands of Abyssinia. These consist largely of decayed basalt of a reddish brown colour. The resulting mud is washed down steep slopes into ravines and so into the Blue Nile and Atbara, which are the chief sources of the flood supply. It is this red mud which gives the Nile in flood its coffee colour, and has rich fertilizing properties.

During September and October, the river in Egypt generally runs above country level and is prevented from inundating it—except where desired—by means of stout longitudinal and confining embankments bordering the Nile and its branches from near Aswân to the sea. For the protection of these banks, where the river bends and is liable to erode them, stone spurs are built to divert and train the river away from the banks which are also protected by stone, or sometimes by reed, revetment.

The Nile banks and their protective works are further safeguarded on all dangerous reaches by unpaid watchmen, or *Corvée*, who are called out from adjoining villages, at the instance of the Irrigation Service, in numbers varying with the height and duration of the flood.

The banks, enclosing the basin lands of Upper Egypt, are similarly protected on exposed reaches by stone revetment and are guarded by *Corvée* watchmen.

Navigation.

The chief duty of the Nile and the first object of the canal system being the supply of water for agriculture, the interests of navigation have to take second place, though every effort is made to accommodate them.

The Nile is navigable for craft of light draught throughout the year from Wadi Halfa to the Delta Barrage, but from here to Rosetta and Damietta is only navigable during the flood months. The lower reaches of the Rosetta Branch are navigable for certain other months.

Most of the main canals—and many of the main drains—of the perennial area are navigable throughout the year, except during winter closure, the lines mostly used being those between the Delta Barrage and Alexandria and between Cairo and Ismailia. The interests of navigation are supervised by a department of the Ministry of Communications.

Water Power.

Water power has been used in the Faiyûm for turning small mills and water-lifting wheels for many centuries, and there are two small water turbines in the same province, and one built into the Aswân Dam and used in operating the lock gates, but there are no large hydro-electric installations in Egypt.

The waters of the Nile and its main canals could be used for development of water power wherever they are headed up by a barrage or regulator. The heads available are, however, determined by the prior requirements of irrigation, and, during the flood season, are generally negligible. This great variability of head at different seasons is the reason why so little use is, or is likely to be, made of the large amount of water power that is undoubtedly available.

CHAPTER III.

THE ADMINISTRATION OF THE IRRIGATION SERVICE.

GENERAL.

The Ministry of Public Works comprises 9 departments, *viz.*:—

Irrigation (for Upper Egypt, Lower Egypt and the Sudan).
State Buildings.
Mechanical.
Tanzim.
Main Drainage.
Physical.
Electrical.
Antiquities.
Opera House.

with a Central Administration and a Legal Department serving all the other Departments.

Of these, the largest and most important is the Irrigation Service, well over half the total number of posts (some 1,800) being held by the combined staff of its three branches.

The Minister of Public Works presides over all Departments and is in final control of the executive. The Under-Secretary of State is the main-spring of the mechanism of the Ministry, and the chief executive officer under the Minister. He co-ordinates the work of the various Departments, dealing direct with their heads, and has to settle questions connected with every aspect of administration and engineering. He is aided by an Assistant Under-Secretary of State.

The office of the Minister, and of the Under-Secretary, is known as the Central Administration or Secretariat. It is directed by the Secretary General, who controls the Archives, Personnel, Translation, and other necessary sub-offices, and is generally responsible for the submission of all correspondence in proper form.

A branch of the State Legal Department, under the direction of a Royal Counsellor, works with the Minister and Under-Secretary for consultation on legal matters, and a Financial Secretary—an official of the Ministry of Finance—exercises general control of accounts, audit and stores.

Though irrigation is ancillary to agriculture, the reason why the Irrigation Service forms part of the Ministry of Public Works and not of Agriculture is that its activities relate chiefly to the execution of works or the manipulation of water, and are almost purely engineering operations. On this account it has always been associated with other Engineering Services under the Minister of Public Works.

The transfer from point to point of immense volumes of water in their journey from dam or barrage to the fields is an operation spread over many days and long distances, and once begun, it is impossible to influence it, except very slightly, to accord with climatic changes, festivals, market days and the many other events which affect the individual cultivator. The broader features of the preliminary programme of distribution are settled in conjunction with the Ministry of Agriculture, but after this stage arrangements crystallize and form an engineering problem only. Naturally the officials of the two Ministries remain in close liaison throughout their work.

Were the distances between storage sites and fields smaller, or the economy of water in summer time a less urgent matter, or were the total area irrigated smaller, it might be possible for the Agricultural and Irrigation Services to coalesce.

OBJECTS.

The activities of the Irrigation Service have two main objects:—

(1) The distribution of water and provision of an efficient system of drainage, and the protection of the country against being flooded by the Nile, tasks that include maintenance of works and the administration of the law embodied in the Canal Act, and regulations under that Act.

(2) The design and construction of works to ensure a better distribution of water, or to provide a more abundant supply, or to ensure better drainage, greater security, or the improvement of the agricultural condition of the land.

ORGANIZATION.

For the control of these activities, the fundamental steps in the organization of the Irrigation Service are those represented by the following official positions:—

1. Under-Secretary of State.
2. Inspectors General.
3. Inspectors of Irrigation Circles.
4. Chief Engineers of Provinces.
5. District Engineers.

Recent recommendations* are that the Irrigation Service should be a self-contained unit, with a Chief other than the Under-Secretary of State for the Ministry, who should be assisted by a strong technical staff and have an office distinct from the Central Ministerial Office. Under present arrangements, however, the Under-Secretary is the Head of the Irrigation Service, and the administration is divided into three Inspectorates General, for Lower Egypt (irrigated area 3,100,000 feddâns), Upper Egypt (irrigated area 2,200,000 feddâns), and the Anglo-Egyptian Sudan.

Lower and Upper Egypt are subdivided into 10 Inspectorates, known as Circles of Irrigation, as detailed in the list below. In charge of each Circle is an Inspector of Irrigation.

Circles.	Provinces.	Head- quarters.	Cultivated Area in Feddâns.			
			Gross Area.	Perennial.	Basin.	Lakes.
LOWER EGYPT.						
First ...	Qalyûbiya and Sharqîya ...	Cairo.	1,079,000	823,500	Nil	640,000
Second ...	Menûfiya and part of Gharbiya	Tanta	1,683,000	932,000	Nil	
Third ...	Beheira	Alexandria	1,011,000	572,200	Nil	
Zifta ...	Daqahliya and part of Gharbiya	Mansûra	880,000	767,500	Nil	
UPPER EGYPT.						
Giza... ..	Giza and part of Beni Suef...	Cairo.	212,986	164,610	48,376	—
Faiyûm ...	Faiyûm	Faiyûm	341,500	340,000	1,500	52,000
Fourth ...	Part of Beni Suef and Minya...	Beni Suef	665,688	521,007	144,681	—
Asyût Bar.	Part of Asyût... ..	Asyût	430,535	113,623	316,812	—
Girga ...	Part of Asyût and Girga ...	Sohâg	319,620	7,310	312,310	—
Fifth ...	Qena and Aswân	Qena	524,429	217,739	306,690	—

The average cultivated area of these Circles is 560,000 feddâns.

In addition to the above Inspectorates, there are the Aswân Dam and the Delta Barrage, each controlled by a Resident Engineer. The former works directly under the Under-Secretary of State, as the reservoir water serves both Lower and Upper Egypt, while the latter works under the orders of the Inspector General of Irrigation, Lower Egypt.

The Barrages of Esna, Asyût and Zifta are controlled by the Inspectors of the Fifth, Asyût and Zifta Circles respectively.

Under each Inspector of Irrigation, there are generally two Chief Engineers. The area of a Chief Engineer's charge is about 200,000 feddâns. Each such charge is usually divided into five districts of about 40,000 feddâns; and a District Engineer, working under the orders of the Chief Engineer, is in charge of the irrigation of each. Under each District Engineer are some 40 canal patrols and watchmen, or "Ghaffirs" employed in working locks, regulators, sluices and bridges in accordance with instructions coming from the Inspector or Chief Engineer.

* Mr. C. E. Dupuis' Report of 1923.

DUTIES.

The general duties of the Under Secretary in relation to all Departments of the Ministry have already been noticed.

As head of the Irrigation Service, he is largely responsible for the great Irrigation works undertaken under his control, both in Egypt and the Sudan.* He has to consider questions of broad policy, examine all important projects, and spend a portion of his time visiting the various provinces of Egypt and the Sudan, inspecting works in progress and the sites of proposed new works.

He decides how the water supply is to be allocated between Lower and Upper Egypt during the low stage of the Nile, coordinates the methods and activities of the Inspectors General, and is the official to whom are referred questions that may arise concerning irrigation as between the two divisions of Egypt, or between Egypt and the Sudan.

In all these duties, he is aided by an Assistant Under-Secretary of State who officiates for him when he is on leave.

The duties of the Inspectors General are to secure uniformity in respect of the control and distribution of water-supply by the Inspectors of Irrigation in accordance with the laws and regulations in force, also in respect of the maintenance of the large and complicated system of works by which control and distribution are effected. These duties require the employment under the Inspectors of a numerous staff and the execution of a large programme of annual repairs of structures and channels, and of clearance of silt deposited in channels during flood. The Inspectors General also superintend the designing and execution of new works having for their object the improvement of existing conditions.

The duties of Inspectors of Irrigation and Chief and District Engineers are dealt with in Appendices E., F. and G.

* In the "Binding of the Nile," the Hon. Sidney Peel says: "It is the peculiar good fortune of those whose care is the water supply of Egypt that they have to travel in thought or in fact over half a great continent and discuss schemes of a magnitude and extent enough to stagger the imagination of the boldest dreamer."

CHAPTER IV.

ESTABLISHMENT.

PERSONNEL.

The pensionable staff of the Irrigation Service, both Technical and Clerical, are as shown in the Appendices A and B, giving their numbers, rank, pay and cost per annum. Details of the Agents Hors Cadre are shown in Appendix C. The establishment usually attached to a Circle of Irrigation is shown in appendix E. All these figures are approximate, being liable to vary from year to year.

NATIONALITY.

The Inspectors of the 1st, 2nd, 3rd and 4th Circles were formerly British and those of other Circles were Egyptians, but this distinction is no longer made. The staff serving under the Inspectors of Irrigation is Egyptian, except for a few British Directors, and Assistant Directors, of Works and a small number of Europeans, mainly employed as draftsmen and on new works.

RECRUITMENT.

The technical Egyptian staff is recruited from the students of the Royal School of Engineering in Cairo. This School was founded by Mohammed Ali Pasha, on the lines of the Polytechnic School of France. It admits students who hold the Secondary Education Certificate (Scientific Side). The course of study extends over four years. After the first two years, students specialize in one of the following five sections: Irrigation and Civil Engineering, Electrical Engineering, Mechanical Engineering, Municipal Engineering, and Architecture. The yearly output of students is about 80.

Should the supply be inadequate, Egyptians are recruited, who hold foreign degrees or diplomas equivalent to, or higher than, those of the School; while draftsmen, and sometimes engineers, are recruited either from the Bûlâq Technical School or from the Cairo School of Fine Arts.

The clerical staff is recruited from candidates holding the diploma of the Higher and the Intermediate Schools of Commerce and the Secondary Education Certificate Part II and, in the event of supply from the above proving inadequate, from those holding Part I of the latter Certificate.

COST OF STAFF.

The total annual cost of the establishment for the operation of the Irrigation Service is L.E. 500,000 approximately.

CHAPTER V.

MAINTENANCE AND IMPROVEMENTS.

MAINTENANCE.

The maintenance of the large and complicated system of works by which the control and distribution of the water-supply are effected, involves a large annual programme of repairs and of clearance of silt deposited in channels during the flood season. In the perennially irrigated area, a large portion of the work is carried out between December 25 and January 31, when the crops do not require water and there is a general closure of canals. In such as are kept open for navigation, clearance work is done by dredgers and proceeds throughout the year. The larger drains are cleared by the same means at any time of the year when the depth of water allows dredgers to float. In the basin areas, clearance of canals is generally done in the early months of the year. Nile and basin banks are generally repaired between February and July.

EXECUTION OF WORKS.

Work in connection with the maintenance and improvement of the Irrigation system, whether it be dredging, hand-clearance of channels, construction or repair of banks, construction or repair of masonry works, bridges, outlets, etc., is carried out by the agency of contractors. The work is put up to tender and then adjudicated to the most suitable contractor, or firm of contractors, quoting low rates. Where the nature of works, or supplies of plant or material, is such that offers from abroad are desirable, the time allowed for tendering is extended. The conditions of tenders for contracts are published in the Official Journal.

Recent recommendations* are that the Maintenance Grants—apart from those for New Works—should be divided into :—

- (a) Grants required to enable the annual deterioration to be met, *i.e.*, indispensable maintenance.
- (b) Credits (about 25 per cent of “a”) for renewals and restorations, not absolutely indispensable but urgently desirable.
- (c) Credits for improvements and petty New Works not of such importance as to be included in the larger class of New Works.

NEW WORKS.

In addition to the maintenance of the existing irrigation system, it is the constant aim of the Service to ensure a better distribution of water, to give better drainage and greater security from high flood, and generally to improve the agricultural condition of the land. It is also vitally interested in the increase of the low-stage supply of the Nile, so that it shall be adequate to the growing needs of the country : this is the main concern of the Sudan Branch, whose activities are described later on. When more water is available, it will be utilised for the easement of present restrictions, and for the extension of cultivation, by conversion of lands in Upper Egypt from the basin to the perennial system of irrigation and by reclamation of the waste lands of the Delta.

It is to enable the Service to attain these ends that the special credits for New Works—about L.E. 1,000,000—are granted annually by the Finance Ministry.

The annual expenditure on the combined working and improvement of the Irrigation system amounts to 47 piastres per feddân of cultivated area, but this does not include the cost to the country of watching the Nile, and basin banks, during the flood season, as the labour involved has to be given free.

* Dupuis' Report.

CHAPTER VI.

FINANCE.

BUDGETARY CREDITS.

The funds required for the administration of the irrigation system and the maintenance and construction of irrigation works are allotted by the Minister of Finance from the revenue of the State on the request of the Minister of Public Works. The proposed expenditure, being part of the Budget, is then submitted to Parliament for approval. No capital account is kept.

These funds amount roughly to L.E. 2,500,000 per annum and consist of three main items :—

1. Salaries, Allowances, etc., amounting annually to about L.E. 500,000.
2. Maintenance and Minor Improvements, amounting annually to about L.E. 1,000,000.
3. New Works, amounting annually to about L.E. 1,000,000.

The actual grants in a typical recent year (1923) for (1) and (2) were as follows :—

ART.	L.E.
1. Salaries, Wages and Allowances	453,609
2. Transport, Transfer and Travelling Allowances	77,827
3. Rent, Water, Lighting and Disposal of Sewage	7,963
4. Furniture and Petty Repairs	3,366
5. Telephone and Telegrams	13,322
6. Petty Expenses	3,787
7. Maintenance of Boats and Materials... ..	31,857
8. Improvements and Petty New Works	58,757
9. Maintenance of Irrigation Works *	821,498
10. Uniforms and Clothing	33
	<hr/>
	L.E. 1,472,019
	<hr/>

* Details of Article 9 above are as follows :—

	L.E.
Maintenance of Nile Banks	104,859
„ and Repairs of Structures	73,058
„ of Canal Works	377,441
„ of Canal Land	132
„ of Drains	156,700
„ of Basin Banks	33,904
„ of Gardens	3,695
„ of Abu Qir Sea Wall	6,098
„ of Irrig. Pumping Station at Abu Menaga	11,294
Labour... ..	48,714
Clearance, Upper Nile Channel	3,040
Maintenance of Roads in Fifth Circle... ..	2,563
	<hr/>
	L.E. 821,498
	<hr/>

APPROVALS.

In order that New Works connected with the soil may have the benefit of being more fully considered by all Services interested in them, it has been proposed* that a permanent Consultative Scheme Board should be set up consisting of the Heads of the Services or Departments of Agriculture, Irrigation, Lands and Direct Taxes, and that all projects for New Works schemes, or applications for concessions should, before taking definite form, be referred to the Board by the Minister concerned. If the scheme was favourably reported on, the Minister would then submit a Note to the Council of Ministers, and ask for approval in principle and the grant of a small special credit for complete study and estimate of the cost of the project.

LAND TAX AND WATER RATE.

The return to the State for its expenditure on its irrigation system is secured directly in the form of Land Tax, and indirectly in the well-being of the population and the revenue from Railways, Customs, etc.

No Government water-rate is charged, for it is included in the Land Tax, which is a land and water tax combined. Payment of the land tax confers the right to a supply of water sufficient for the maturing of one crop during the year, and imposes on the Government the obligation to make this supply available. If the Government fails to do so, the land tax is remitted. The only measurements made are of those areas which remain without water throughout the year from no fault of the cultivator, and on which the land tax has, therefore, to be remitted. The officers of the Egyptian Irrigation Service are thus relieved of all the troublesome revenue work which adds so much to the duties of the Irrigation staff in many other countries.

In 1895, a systematic re-valuation of all land in Egypt was commenced. The rental value of the land at the time of re-assessment was determined, and taken as the basis for adjustment of the land tax, which, for fully developed land, was then fixed by Decree of May 10, 1899 (for 30 years after the first full re-assessed payment) at 28·64 per cent of the rental value of the land. This percentage was calculated so that, on the average rental value of the land throughout Egypt, the total revenue from land tax would remain unaltered.

In addition to the above tax, and in order to remunerate the Government for the money spent on the construction of the Aswân Dam and correlated works for conversion of Upper Egypt basin lands to perennial irrigation, a supertax on such lands was authorized by Decree of March 17, 1902, *viz.*, 50 piastres and 30 piastres per feddân on lands irrigated by free-flow and lift respectively.

REMISSION OF LAND TAX.

The irrigation of "perennial" land being assured throughout the year, such land is not considered as having any claim to remission of tax, except in very exceptional cases examined by the Ministry of Finance.

The irrigation of basin land is not so assured, being largely dependent on the height of the flood, and, as taxed land is considered to have the right to the supply of water sufficient for the maturing of one crop per annum, the Government, in accordance with a Decision of the Council of Ministers dated November 8, 1888, remits the tax when, owing to lack of irrigation, such land cannot be cultivated; only half of the tax is remitted if it can be watered during flood by means of lifting machines.

High lands bordering the Nile, islands in the river, and "hoshas," which the Nile in flood may sometimes be too low to irrigate by free-flow, are only taxed if the Nile has watered them.

Land Tax is only remitted for lack of water during the flood period and not during other periods. The Government distributes the available low stage supply to the best of its ability. If that supply is insufficient, it is the cultivators alone who bear the consequences.

* Dupuis' Report.

CHAPTER VII.

RELATIONS WITH THE MINISTRY OF INTERIOR.

PROVINCIAL COUNCILS.

The views of the country in respect of irrigation questions are secured through the Provincial Councils, which are composed of two elected members from each district of the Province, with the Mudir as President, and which meet from time to time. When Irrigation questions are discussed, the Inspector of Irrigation is expected to be present, but has no vote. It goes without saying that opinion on questions of sufficient importance may be voiced through the Parliamentary Deputies, but the Provincial Councils are the ordinary means of expression.

The attributions of these Councils are laid down in the Organic Law of May 1, 1883, and in Law No. 29 of July 1, 1913, of which Articles 36 and 38, relating especially to Irrigation questions, are as follows:—

“ *Art. 36.*—Indépendamment des attributions à lui conférées par disposition formelle de la présente loi ou de toute autre loi, le Conseil peut être consulté par le Moudir ou par tout Ministre sur toute question au sujet de laquelle le Moudir ou le Ministre juge utile de prendre son avis.

Le Conseil peut en outre soumettre spontanément au Moudir ou, par l'entremise de ce dernier, à tout Ministre ou au Conseil des Ministres, des vues sur les besoins généraux de la Province et notamment en matière d'agriculture, d'irrigation, de voies de communication, de sécurité publique, d'hygiène publique et d'enseignement.”

“ *Art. 38.*—Sera soumis, pour avis, au Conseil Provincial, le programme annuel du Ministère des Travaux Publics concernant les matières suivantes:—

- (a) Création de canaux et drains publics.
- (b) Curage de canaux et drains publics.

Au cas où le Ministère des Travaux Publics jugerait nécessaire d'apporter une modification quelconque à la délibération du Conseil Provincial, il doit consulter le Conseil sur cette modification.

- (c) Rotations d'irrigations pendant l'étiage.

Toutefois, le fait de soumettre au Conseil le programme des rotations ne portera aucune atteinte au droit du Ministère des Travaux Publics et de ses agents de modifier l'ordre des rotations, en cas d'urgence, sans demander préalablement l'avis du Conseil Provincial. Dans ce cas, le Conseil, dans sa première réunion, doit être informé des raisons qui ont motivé la modification.”

LAWS AND REGULATIONS.

As regards the measures for enforcement of the regulations which affect the Irrigation Department such as the Canal Act, Corvée Decree, etc., the provinces of Egypt are administrative areas, at the head of each of which is an agent of the Ministry of the Interior, called a Mudir, whose duties approximate to those of a Prefect of a Department in France, while the districts into which each province is divided correspond to “ *Arrondissements* ” in France, and are under the control of a Mamur working under the direction of the Mudir. The districts are divided into village areas, whose headmen are called “ *Omdehs* ” corresponding approximately to the Maires of villages in France, who are responsible to the Mamurs for the administration of Government within their areas.

Decrees and circulars govern the rôle of the Mudirs, Mamurs and Omdehs in respect of irrigation, but the personnel of the Irrigation Service works directly under, and is solely controlled by, the Inspectors of Irrigation.

ATTRIBUTIONS OF MUDIRS AND INSPECTORS OF IRRIGATION.

The relations between the Mudirs of Provinces and the Inspectors of Irrigation are laid down in a ruling of December 1885, the general spirit of which is that, while the Inspectors of Irrigation and their staff are the executive agents in all matters concerning irrigation, it is for the Mudirs to bring to their notice, and discuss with them, the needs, requests and complaints of the public, in regard to irrigation. Thus the Mudir is interested in the fair distribution of the water supply throughout the districts of his province in accordance with the needs of the crops and, in the event of shortage or excess, he invites the attention of the Inspector of Irrigation. In conjunction with the Provincial Councils, he makes recommendations regarding the clearance of canals, etc., mentioned on page 11. The Mudir can only take action himself in case of pressing danger from breach of banks or failure of works, and when a representative of the Irrigation Department is not present. As for the Inspector of Irrigation, his duty is to meet the wishes of the Mudir in regard to fair distribution of the water supply, but he alone is in technical control of that distribution. He should give all information desired by the Mudir, especially in matters to be referred to the Provincial Council. He should notify the Mudir of measures for rotational supply and keep him informed of all changes and improvements proposed in the irrigation and drainage arrangements of the province. If at any time there is disagreement between the Mudir and the Inspector of Irrigation, they can refer the matter to their respective Ministries.

CHAPTER VIII.

LEGISLATION.

GENERAL.

Strange as it may seem for a nearly rainless country which owes its very existence to the waters of the Nile, there were, before 1885, practically no laws relating to irrigation in Egypt. It was however generally recognised that, on the one hand, the country must give its labour as *Corvée* for the construction and maintenance of banks and canals, as well as for their safeguarding during flood; while, on the other hand, it was for the Government to distribute the water supply available, enable the land to be cultivated, and then impose such land taxes as it judged suitable.

The principle which now governs irrigation is that the land, which would produce nothing without irrigation, has the right to such water as the supply of the Nile and the state of the canals allow, and it is for the Government to judge of these latter conditions. Thus on the one hand, the Government plans and carries out the works which it considers necessary to assure and to develop irrigation and drainage, and distributes the water supply at all seasons in the public canals, allotting it to them and fixing their water levels in accordance with the agricultural needs of the land and with the supplies available. It decides the dimensions of outlets, the power of machines, and the size of pumps, capable of taking water out of the public channels in accordance with the areas served. On the other hand, a landowner has the right to take as much water as can be passed through these outlets or pumps, when supply is available in the channel serving his land.

THE CANAL ACT.

The Decree of February 22, 1894, regarding banks and canals, known as the Canal Act, constitutes the principal legislative act regarding irrigation. It is given in extenso in Appendix H, and the amendments introduced since 1894 in Appendix I.

In 1913, an Irrigation Law was drafted to replace the Canal Law of 1894, to incorporate decrees relating to lifting machines and *Corvée*, and combine in one measure all legislation affecting irrigation. This law has, unfortunately, never been enacted but it is in use in the various offices of the Irrigation Service as a guide on questions of principle, and sheds light where the existing Canal Act is not clear. It indicates the ends to be aimed at, though the power to enforce them does not always exist.

The arrangement adopted in the 1913 draft law is as follows:—

Chapter I defines the Public Domain in connection with irrigation, and indicates some of the general consequences which follow from the special situation of private land or private works which are situated in or intermingled with that domain. Chapter II vests in the Irrigation Department a general control over irrigation, up to the point at which water leaves the limits of the public domain. It is under this head that powers as to rotations and the watering of *Sharaqi** lands are placed. Chapter III deals with the works in the banks of canals—in general in private ownership—which are necessary for getting water out of the public canal into the *misqa*. Chapter IV treats of the machines necessary for the like purpose when supply from the public canal is not by gravitation. Chapter V treats of water when it has reached the *misqa* in private ownership. Chapters VI and VII deal in detail with private works within the limits of the public domain. Chapter VIII treats of offences; Chapter IX of procedure; while Chapter X consists of miscellaneous provisions.

IRRIGATION RESTRICTIONS.

In virtue of Article 7 of the Canal Act of 1894, the Irrigation Service distributes supply in the perennially irrigated area throughout the year by rotations, *i.e.*, alternating periods of full supply and closure, the periods of both varying in accordance with the needs

* Here meaning fallow land awaiting flooding for sowing of maize.

of the crops, the intervals between waterings and the water supply available. The reaches, or sections, into which canals are divided for this purpose, and the rotations that are to be enforced are published in advance in the Official Journal.

To prevent the water supply, available in the Nile for summer crops, from being drawn upon for the sowing of maize until the extra supply provided by the rising flood justifies it, a Decree was issued on May 15, 1903, forbidding the sowing of maize in Lower Egypt between May 15 and July 31, unless otherwise authorized by the Ministry of Public Works.

It was modified by a Decree dated June 22, 1905, by which the same interdiction was applied to Upper Egypt, and, by a Decree dated April 27, 1913, the date of interdiction was advanced to May 1.

WATCHING AND PROTECTING BANKS DURING FLOOD.

Before 1892 practically the whole of the male population of Egypt between the ages of 15 and 50, was liable to be called upon, and compelled by Law, as *Corvée*, or forced labour, to assist in :—

- (a) The maintenance of Nile, basin and canal banks, and the clearance of canals.
- (b) The watching and protecting of Nile, basin and canal banks and the operation of regulating works during flood.

In 1892 the *Corvée* for (a) was finally abolished, paid labour taking its place, but the *Corvée* liability for (b) still survives, the Decree regulating it being that of June 29, 1899. An earlier Decree, that of September 9, 1887,* is also still in force and provides for the summoning of flood *Corvée* in an emergency. According to this Decree, as soon as the Nile flood reaches R.L. 20·03 m. or 24 pics on the Cairo (Roda) Nile Gauge, every able-bodied man is liable to be called upon by the Mudirs of Provinces, at the instance of the Irrigation Service, to assist in defending the country against the inroads of the Nile at any point where danger arises, recruitment being from villages adjoining the danger spot. Even before 24 pics is reached, the Mudir can exercise the same powers, if the danger is held to justify it.

Owing to the improved state of the Nile banks, the Irrigation Service has been able in recent years, considerably to modify the hardships involved in this *Corvée*, and much fewer watchmen are now called out than in the past. Their numbers vary in accordance with the height and duration of the flood. They are still required to be present on the basin banks, and protect them from wave action when the water is high.

EXPROPRIATION FOR PUBLIC UTILITY.

The Government assumes the right to expropriate private property for works of public utility. A considerable amount of such expropriation is required in connection with irrigation developments. It is carried out by the Survey of Egypt on behalf of the Irrigation Service. The laws governing such expropriation are : No. 5 of April 24, 1907, for cases brought before the Native Courts, and No. 27 of December 24, 1906, for cases brought before the Mixed Courts, *i.e.*, for foreigners. They are attached as Appendices J and K.

STEAM ENGINE LAW.

Pumping Stations owned by private persons or companies, are ruled by two decrees, *viz.*, the Lifting Machines Decree of 1881, and the Steam Engine Decree of 1900. See Appendices L and M.

Application for authorization to instal these engines—whether it be for irrigation or drainage—are considered first by the Irrigation Service, which fixes the size of the pump permissible and informs the Mechanical Department of the conditions which must be complied with by the owners. The Mechanical Department, after examining the demand from the point of view of the Steam Engine Decree, prepares the authorization, which is signed by the Inspector-General of Irrigation and the Chief Inspector of Steam Engines. The Mechanical Department is responsible for the periodic inspection of the machinery and for ensuring compliance with its own requirements, but takes no responsibility for infraction of regulations imposed by the Irrigation Service.

* See Appendix N.

OBSERVANCE OF LAWS.

The existing system of Administration in the provinces fails in many directions to secure proper observance of the Laws and Regulations of the Irrigation Department when they conflict with the habits and inclinations of the fellahîn. It is not that they are regarded as oppressive; their justice and necessity are recognised by the more educated classes. The failure is due almost entirely to administrative weakness in the ultimate unit, *viz.*, the Omdeh of the village, of which representative of authority there are some 3,880 examples in the country. The Omdeh is not the only person in the world to hesitate to make enemies of his neighbours, but the fact that he does hesitate, accounts for the irrigation regulations being so often unapplied. The village authorities, in the same way, often fail as magistrates on the Irrigation Offences Commissions, a failure that throws heavy additional duties on the police, at a time when they are already greatly occupied. For it is an unfortunate coincidence that the laws and regulations of the Irrigation and Agricultural Departments require to be most strictly enforced in summer, and summer-time, in Egyptian statistics, is the season that is most productive of crime.

With the spread of education, the villagers will no doubt acquire a stronger sense of civic duty. In the meantime, a great deal more could be done to deter, if the penalties for breach of law and regulations were made more severe. At present, they are quite inadequate, and are usually imposed many months after the contravention has been committed. Their effect is thus still further diminished.

CHAPTER IX.

THE IRRIGATION SERVICE IN THE SUDAN.

GENERAL.

The Sudan Branch of the Irrigation Service was created in 1904. Its main object was, and is still, the collection of hydrographical information, and the study and execution of projects for the increase of the Egyptian water-supply. As the result of its investigations, it was decided to build a dam across the White Nile at Gebel Aulia, 40 kilometres south of Khartoum, and it is expected that this work will shortly be carried out. The other objects of the Service were the direction and development of irrigation in the Sudan. The areas irrigated were small, and consisted of strips and patches of land watered more or less perennially by means of lifting machines on the Nile, minor basins in the provinces of Berber and Dongola, and the miniature deltas flooded by the River Gash near Kassala and the Khor Barraka near Tokar. Moreover these two latter areas are unconnected with the Nile and independent of the Service, which has helped to improve their irrigation but is not responsible for it. As regards development, this has been represented chiefly by the Sennar Dam and Gezira Canalization Scheme, and, with the coming into operation of this scheme, irrigation in the Sudan assumes an importance it did not possess before.

ADMINISTRATION.

This Branch Service is directed by an Inspector-General of Irrigation with his headquarters at Khartoum. He is responsible to the Under-Secretary of State at the Ministry of Public Works in Cairo. He may be said to assist the Sudan Government in its own irrigation work and to be assisted by it in the work carried out in the Sudan for the benefit of Egypt. He also represents the interest of the Egyptian Government in the control of the Nile in the Sudan.

The area controlled under these conditions is divided into two divisions, which are in charge of Inspectors of Irrigation, and are as follows:—

<i>Division.</i>	<i>Headquarters.</i>
Upper White Nile Division.	Malakal.
Main Nile Division.	Khartoum.

As regards the Blue Nile (Blue Nile and Gezîra Divisions) arrangements are now as indicated on the next page under "Relations with the Sudan Government."

The Inspector-General and Inspectors are British, as are most of the Directors and Assistant Directors of Works, but some are Egyptian. The staff also includes engineers, who have been trained at The Gordon College in Khartoum, and a few Europeans employed on New Works.

The Inspector of the Upper White Nile Division studies and carries out works for the conservation of water in the White Nile and branches south of Goz Abu Goma, and for the reduction of waste in the Sudd Region, he also collects hydrographical data in that section of the Nile Basin. The Inspector of the Main Nile Division is in charge of the White Nile between Goz Abu Goma and Khartoum, and the main river thence to Wadi Halfa. He assists the Inspector-General in his head office, coordinates all gauge levels and discharges recorded throughout the Sudan, and is in general control of the basins of Berber and Dongola Provinces, with an A.D.W. in local charge.

The project, referred to earlier, for a dam at Gebel Aulia is in the hands of the Inspector-General, with a Director of Works in local charge.

RELATIONS WITH THE SUDAN GOVERNMENT.

For administrative purposes the Sudan is divided into fifteen provinces controlled by Governors, with whom the Inspectors of Irrigation work in accord, while remaining directly responsible to their Inspector-General.

Irrigation and irrigation works in the Sudan are of course regulated by the laws of that country, as are the officials of the Service. The latter are, however, servants of the Egyptian Government, and, with some exceptions, are governed by Egyptian rules regarding pay, promotion, pension, etc.

The Sudan Government pays the cost of irrigation within the Sudan. Egypt pays for investigations and work carried out in the Sudan in the interest of the Egyptian water-supply, and will pay for the Gebel Aulia Dam. The broad principle is that the Sudan Government pays for water that stays in the Sudan, the Egyptian for water that passes through it.

The Sennar Dam and Gezira Canalization Scheme, dependent on the Blue Nile, represents an undertaking carried out for the benefit of the Sudan. The construction of these works was controlled by the Egyptian Ministry of Public Works until 1922, when the Sudan Government appointed its own Irrigation Adviser and Consulting Engineers and, when the scheme came into operation in August 1925, a Chief Engineer for control of the dam and canal system, also a Resident Engineer for the Sennar Dam.

Cost.

The expenditure, incurred by the Sudan Branch of the Irrigation Service during recent years, has been approximately L.E. 55,000 per annum on ordinary budget.

The cost of the Sennar Dam and Gezira Scheme was provided for by the loan raised for that purpose by the Sudan Government. Expenditure on other New Works by the Service itself has been comparatively small, with the exception of that on dredging operations in the "Sudd" region and on the Gebel Aulia Dam.

CHAPTER X.

PHYSICAL DEPARTMENT.

This note would be incomplete without reference to the operations of the Physical Department, whose meteorological and hydrological work has a direct and important bearing on irrigation and the Nile water-supply.

METEOROLOGICAL SERVICE.

The Meteorological Service controls 56 meteorological stations in Egypt and the Sudan, of which 39 * are in the Nile basin. Daily weather reports are issued giving the results of meteorological reports received telegraphically from a number of selected stations in or near the Nile basin, and a weather forecast is issued during the winter months. Monthly summaries of the weather are issued, and an annual report giving the observations from all stations. The climatological normals for all stations are also published. In addition, studies are made of the connections between the rainfall of the Nile basin and other meteorological phenomena.

HYDROLOGICAL SERVICE.

The Hydrological Service collects, checks, and tabulates the river gauge readings and discharge observations taken by the Irrigation Service. The gauge readings of 11 selected stations are published in the Daily Weather Report and a monthly summary of the state of the Nile and its tributaries is issued giving a list of all discharges observed during the previous month. The number of gauges on the river and its branches south of Aswân is 67† and the number of discharge sites at which regular discharges are observed is 21‡. In addition, rain gauges are supplied to 17 stations in Egypt, 59 in the Sudan and 3 in Abyssinia, and observations of rainfall are received from these Stations and from 44 stations in Kenya Colony, 53 in Tanganyika Territory and 5 other stations. These rainfall stations are in addition to the 56 meteorological stations controlled by the Meteorological Service. An annual report on the Discharges, Levels and Rainfall of the Nile basin is also published.

RESPONSIBILITIES.

The discussion of the statistics received is undertaken in connection with proposed water conservation projects. During the period of regulation of the river at Aswân, frequent forecasts of the state of the river are sent to the headquarters of the Irrigation Service in Cairo to assist in the regulation of the dam. The Physical Department is responsible for the uniformity of the methods of observing discharges and the supply and regular rating of all current meters used both in Egypt and the Sudan. It also carries out experiments for the improvement of methods of water measurement and generally advises the Irrigation Department in all matters of a physical nature.

INSTRUMENTS.

In addition, the Physical Department contains an instrument-repairing workshop. It supplies survey and scientific instruments used by the Irrigation Department and keeps them in proper repair.

* 16 in Egypt and 23 in the Sudan.

† 57 in the Sudan, 6 in Uganda, 3 in Abyssinia, and 1 in Kenya Colony.

‡ 1 in Egypt and 20 in the Sudan.

APPENDICES.

APPENDIX "A."

The **Pensionable Technical Establishment** of the Irrigation Service is as follows:—

No. n Budget	Post.	Egypt.	Sudan.	Grade.	Ranging.		1924 Budget Credit.
					Min.	Max.	
					L.E.	L.E.	
3	Inspectors General of Irrigation	2	1	—	1,750		5,250
3	Assistant Inspectors General ...	3	—	IB	1,200	1,500	4,500
2	Inspectors 1st Class	2	—	IB	1,200	1,500	3,000
5	„ 2nd „	5	—	IC	1,200	1,360	6,260
11	„ 3rd „	7	4	II	900	1,140	11,700
2	Resident Engineers	2	—	II	900	1,140	2,420
13	Directors of Works	12	1	III	720	960	11,370
22	„ „ „	17	5	IV	720	840	17,670
21	Divisional Chief Engineers... ..	21	—	IV	540	840	13,382
6	Non-Divisional Chief Engineers ...	6	—	IV	540	780	4,924
2	Chiefs of Lifting Machines Offices	2	—	IV	540	780	1,200
62	Assistant Directors of Works ...	49	13	V*	240	600	28,472
2	Chiefs of Lifting Machines Offices	2	—	V	240	600	480
1	Superintendent of Gardens, 2nd Cl.	1	—	V	240	600	600
47	Engineers	47	—	V	240	600	19,714
1	Forman Mechanic	1	—	V	240	600	605
238	Engineers	212	26	VI	180	468	60,193
4	Mechanics	4	—				
9	Draughtsmen	9	—				
1	Chief Gardener	1	—				
2	Mechanics	2	—	VII	96	312	6,976
28	Draughtsmen	28	—				
18	Assistant Engineers	—	18	VIII	72	216	8,521
9	Mechanics	8	1				
51	Draughtsmen	49	2				
563							207,237

* The maximum salary of a certain number of Assistant Directors of Works existing prior to 1921 has been raised to L.E. 720 per annum in Class IV

APPENDIX "B."

The **Pensionable Administrative and Clerical Establishment** of the Irrigation Service is as follows :—

No. in Budget.	Post.	Egypt.	Sudan.	Grade.	Ranging.		1924 Budget Credit.
					Min.	Max.	
					L.E.	L.E.	L.E.
2	Heads of Section	2	—	IV.	540	840	1,284
10	Sub-Heads of Section	10	—	V	240	600	4,026
26	Clerks	20	6	A	240	516	8,298
125	Clerks	119	6	B	120	336	23,629
342	Clerks	329	13	C	72	216	42,831
505							80,068

APPENDIX "C."

The Agents Hors Cadre Staff of the Irrigation Service is as follows :—

No. in Budget.	Post.	Egypt.	Sudan.	Grade.	Ranging.		1924 Budget Credit.
					Min.	Max.	
					L.E.	L.E.	
26	High Grades*	15	11	A	60	144	2,936.8
13	High Grades*	13	—	B	60	108	1,089
9	Drivers, 1st Class	8	1	B	60	108	708.8
11	Mechanics	11	—	B	60	108	1,038
13	Overseers	5	8	B	60	108	1,346.6
32	Foremen, 1st Class	32	—	I	78	90	2,353.2
6	Archives Sorters, 1st Class	6	—	I	78	90	399
4	Artisans, 1st Class	1	3	I	78	90	281
23	Archives Sorters, 2nd Class	20	3	II	60	78	1,495.2
90	Foremen, 2nd Class	86	4	II	60	78	4,917.4
61	Artisans, 2nd Class	58	3	II	60	78	4,178.1
16	Chief Messengers	16	—	II	60	78	1,005
8	Chief "Farrashes"	8	—	II	60	78	498
48	Telephone Operators	48	—	II	60	78	2,514.8
9	Drivers, 2nd Class	9	—	II	60	78	552
9	Chief Chainmen	7	2	II	60	78	515.3
158	Messengers, 1st Class	146	12	III	42	60	7,219.2
66	Chainmen, 1st Class	65	1	III	42	60	2,823.8
11	Gauge Recorders	11	—	III	42	60	564
4	"Farrashes," 1st Class	4	—	III	42	60	180
81	Artisans, 3rd Class	76	5	III	42	60	3,822.4
73	Foremen, 3rd Class	71	2	III	42	60	3,179.4
280	"Baharis," 1st Class	280	—	III	42	60	11,900.4
92	Telephone Operators, 2nd Class...	92	—	III	42	60	3,973.8
25	Drivers, 3rd Class	25	—	III	42	60	1,253.9
19	Printers, 3rd Class	19	—	III	42	60	878.4
36	Archives Sorters, 3rd Class	34	2	III	42	60	1,677.5
545	Messengers, 2nd Class	478	67	IV	30	42	18,182.1
188	Chainmen, 2nd Class	138	50	IV	30	42	6,112.4
271	"Farrashes," 2nd Class	188	83	IV	30	42	9,049.3
22	Telephone Operators, 3rd Class...	22	—	IV	30	42	747.6
20	Drivers, 4th Class	20	—	IV	30	42	803.3
701	Labourers	672	29	IV	30	42	23,391.5
1566	"Baharis," 2nd Class	1,521	45	IV	30	42	51,876.3
6	Printers, 4th Class	6	—	IV	30	42	206.4
4542							173,669.9

* Generally employed on clerical work.

APPENDIX "D."

The **Temporary Technical Establishment** of the Irrigation Service is as follows:—

No. in Budget.	Post.	Egypt.	Sudan.	Grade.	Ranging.		1924 Budget Credit.
					Min.	Max.	
					L.E.	L.E.	L.E.
1	Chief Mechanical Engineer ...	1	—	IV	540	840	700
3	Chief Engineers	3	—	IV	540	780	2,016
3	Engineers	3	—	V	240	600	4,560
1	Mechanical Engineer	1	—				
5	Foremen Mechanics	4	1				
12	Engineers	12		VI	180	468	5,376
2	Mechanics	2					
2	Draughtsmen	2					
1	Mechanic	1		VII	96	312	956
3	Draughtsmen	3					
1	Mechanic	1		VIII	72	216	159
34							13,767
12	Inspectors of Rotations						1,800
9	Clerks of Rotations						324
55							15,891

APPENDIX "E."

Duties of Inspectors of Irrigation.

The Inspector of Irrigation is the executive officer responsible for the management of the irrigation system within the area or Circle he is charged with, generally some 500,000 feddâns.

Within this area, his more important duties comprise :—

- (a) The distribution of the water supply from the headworks of his main canal or canals to the outlets from the public distributaries ; and the disposal of surplus water in public channels so as to avoid detriment to the area served.
- (b) The protection of the country from the dangers of high flood ; the upkeep of the river-training works and the Nile banks ; and supervision of the work of the Corvée watchmen at various stages of the flood.
- (c) The maintenance in good order of the public canal and drainage systems, with the clearance of silt from channels and the repair of all masonry works, bridges, sluices, etc.
- (d) The improvement of the canal and drainage systems, with preparation of the plans, and execution of the works involved.
- (e) The administration of the Canal Act and Lifting Machine and Steam Engines Laws, with settlement of the disputes, etc., arising therefrom.
- (f) The administration of the establishment under his control and the expenditure of some L.E. 200,000 per annum.
- (g) The frequent inspection of all parts of the area under his control.

These duties bring him in frequent touch with most Departments of other Ministries, such as the Department of Agriculture, the Provincial Councils and Municipal bodies, the Survey Department, the Coastguards and Fisheries Administration, the State Domains, the Main Roads and Inland Navigation Departments and the Egyptian State Railways Administration and the Light Railways Companies.

Space does not allow of the elaboration of all these duties and the responsibilities they involve, but some idea of their extent may be gathered from the following :—

Commencing with the month of August on the arrival of the flood, an Inspector's daily duties comprise careful arrangements for distribution of water at suitable levels and in such quantities as crops require ; at the same time, the levels in the drains must not be unduly raised. During these four flood months, errors in regulation may mean silt deposit in canals and drains and its subsequent removal. Thousands of pounds are saved annually in clearance costs by the avoidance of such errors, which can only be done by closest attention on the part of the inspector to the daily gauge readings in all the channels.

During these months there may be a high flood, which means that to the Inspector's general responsibility is added a period of acute anxiety. In Upper Egypt, a low flood is attended by equally anxious times ; insufficient supplies make the filling of basins a difficult task ; water has to be maintained in them for longer periods than usual and breaches may occur, sometimes wilfully caused.

Furthermore, during these months, the Inspector has to prepare proposals for his budget : also for maintenance work, which necessitates a study of every canal and drain in his charge. The extent of the work involved may be gauged when it is remembered that, for instance, in the 1st Circle of Irrigation there are, within the Public Domain, 383 canals and 68 drains having a total length of 3,135 and 844 kilometres respectively.

The next three months see the Inspector faced with the execution of his heavy programme of winter clearances of canals, the bulk of it having to be rushed through in 40 days. For the whole Irrigation Staff these 40 days constitute one of the most strenuous periods of the whole year.

In these months also, all repairs to regulators, locks and bridges have to be carried out with the least possible dislocation of traffic, and all repair works hastily executed during the short periods it is possible to keep the canals empty. In certain Circles the difficult task of constructing the annual suddes in the main branches of the river has to be carried out.

The Inspector's administrative duties continue to make constant demand during all these months; pumping installations which contravene their licences, and numerous cases coming under the Canal Act, call for administrative action. Applications for the erection of new pumping installations for irrigation or drainage have to be dealt with. The renewal of, or the refusal to renew, time-expired permits of pumping installations is decided upon. Inspectors are further called upon to decide numberless disputes concerning the net-work of privately owned channels which covers the country. To the general mass of the population for whom costly litigation is impossible, he is the final court of appeal in such cases.

In the early months of the year, the Inspector has also to look ahead; he must decide on his programme for irrigation of summer-rice areas, and prepare the spring and summer rotation tables and all necessary information regarding distribution of supply during the low stages of the Nile.

The next period to be considered is the five months from March to July, during which the difficulties of making an inadequate supply go round are, in most years, acute. It is in these months that the Inspector comes most into contact with the cultivator and during which, by his equitable distribution, his readiness to examine the smallest complaint and his power to control, he has made the title of "Moffettish el Raï" recognised as synonymous with justice and fairness throughout the country. Finally, at the latter end of this period comes the watering of "sharaki" and the sowing of the dhoura crop, when the supply is never adequate to the demand. Tension is only relieved on the arrival of the flood. The vagaries of a fluctuating river and its supply, climatic changes, the varying demands of crops, the spread of cultivation and the demand for improved methods, involving greater efficiency of administration and control, all these make the problems of canal management and water distribution indeed difficult, varied and complicated.

It must be borne in mind that the management of the irrigation system in Egypt does not merely consist in keeping the machine running. It involves ceaseless efforts so to control and direct it that retrograde tendencies shall be checked, defects repaired, adjustments made and constant attention and thought given to improvements, for it must never be forgotten that it is on the running of this machinery—which as yet is far from the state of perfection aimed at by the Service, a perfection still necessitating years of arduous work of improvement—that the welfare of the country so largely depends.

Water is the life blood of Egypt and the irrigation system its arteries; the margin between agricultural wealth and poverty, if not ruin, is small; efficiency in irrigation matters has been, and must remain, vitally important to the country and no one is more alive to it than the fellah himself.

The staff of a large Circle consists of:—

No.	Categories.
3... ..	Directors of Works.
6... ..	Assistant Directors of Works.
3... ..	Chief Engineers.
28... ..	Engineers.
15... ..	Draftsmen.
54... ..	Accountants and Clerks.
441... ..	A.H.C., of which 325 are concerned with water distribution.

The Chief and District Engineers having but little to do with the maintenance of flood protection works and the construction of new works or with the preparation or execution of projects, these are carried out or dealt with by special staff attached to the Inspector's Office, some of which is permanent, the rest being temporary and fluctuating according to the volume of work in hand.

APPENDIX "F."

Duties of Chief Engineers.

In most Circles the Chief Engineer's duties are confined to the regulation of the water supply under the supervision or direction of the Inspector, observation of discharges, investigation of complaints, interviewing local landowners, representing the Irrigation Department on Mudîriya Commissions, investigating and reporting on claims for reduction of land tax due to lack of irrigation and reporting on private water course disputes referred to him through the Mudîriya, under the Canal Act.

For these purposes he is provided with one or two assistant Engineers called "Moawin," who reside at the Chief Engineer's Headquarters, *i.e.*, the capital town of the Mudîriya.

APPENDIX "G."

Duties of District Engineers.

The District Engineer's duties include the regulation of water supply within his district from the point where the control of the Chief Engineer ceases, the clearance and maintenance of public channels, enquiry into disputes and cases connected with the distribution of water in detail, and making *procès-verbaux* against contraveners of irrigation regulations—a specially heavy task in June and July. He has then to attend to the local administration of the Flood Corvée work and repeat the process of making *procès-verbaux* against the Sheikhs and Omdehs. The flood season having come to an end, the District Engineer has at once to start making sections of the canals and drains serving his district in preparation for their silt clearance during the winter, which work lasts until the end of April, when the District Engineer has again to resume the duties of the summer season.

His duties are never-ceasing and onerous, and they are responsible, for the reason that he is the connecting link between the "fellah" and the Ministry. His headquarters are in the Capital (Markaz Town) of the District.

APPENDIX “H.”

THE EGYPTIAN CANAL ACT.

WE, KHEDEVE OF EGYPT,

On the proposition of our Minister of Public Works, and with the approbation of our Council of Ministers ;

Having heard the Legislative Council.

HEREBY DECREE AS FOLLOWS :—

Public Canals and Banks.

ART. 1.—By the word “canal” (*tir'a*) is meant a channel intended for the irrigation of the whole or part of the lands of more than two villages.

All such canals are considered public. They are generally constructed by, and maintained at the expense of, the Government, and form part of the public domain.

The use and occupation of the banks of the canals is only permitted to private individuals on sufferance in conformity with the provision of Article 21 of this Decree.

Private Water Courses.

ART. 2.—By the word “water course” (*misqa*) is meant a channel or ditch intended for the irrigation of the lands of one or two villages only, or the land of one single proprietor or of a family holding land in common, although it may lie in several villages.

All water courses are considered private property ; their construction and maintenance are at the charge of those who benefit by them. In case of delay in clearing them, the Government may clear them at the expense of those who benefit. The amount expended for this purpose will be apportioned by the Mudir in proportion to the tax paid by each, and will be recovered in the manner prescribed by the Decree of March 25, 1880.

Nevertheless, if the land generally irrigated by a water course exceeds in area one thousand feddâns, and if such land is the property of one or more individuals, this water course may, upon the application of the owners, be considered a public canal.

Drains.

ART. 3.—The word “drain” (*masraf*) means a channel intended to carry the water off the lands, whether it be irrigation, rain, or drainage water.

A drain is public when it serves more than two villages, and private when it serves one or two villages only, unless it is intended for the drainage of an area of more than 2,000 feddâns, in which case it is considered public, although situated in one village only. Public drains are maintained by the Government, and private drains by those benefiting by them.

The provisions of the second paragraph of the preceding article are applicable to private drains.

Protective Works against Inundation.

ART. 4.—The works for protection against inundation include banks, spurs, cross banks (*salîbas*), longitudinal banks (*tarrâds*) and other works serving to protect the land and villages from flooding. These works are considered public and are wholly at the charge of the Government.

As regards private *hôshas** lying on the *sâhels* of the Nile or situated within the basins, the owners of which are those who constructed them, their maintenance will be at the charge of such owners.

* Generally a small area of land surrounded by earthen banks.

Powers of Inspectors of Irrigation and of Chief Engineers.

ART. 5.—The Inspectors of Irrigation represent the Ministry of Public Works and have under their orders the Chief Engineers and all the personnel of the Irrigation Service within the Circle of their Inspection. Their powers and their relations with the Mudirs are laid down in the Rules of December 31, 1885.

Servitudes.

ART. 6.—The owners of lands upon which a legal servitude is imposed, such as consists in water courses and drains traversing them for the benefit of adjacent lands, cannot, under any circumstances, bring under cultivation these water courses or drains, nor destroy them nor fill them up, without the consent in writing of the owners of the lands benefiting by these drains or water courses.

Stoppage of Lifting Machines or Closure of Canals.

ART. 7.—No compensation can be claimed from Government for losses arising from the insufficiency or stoppage of water in a canal, due to *force majeure* or to necessary repairs or alterations, or to any measure which the Inspector of Irrigation shall deem necessary to take to regulate the water in the canal or to maintain its surface level, as for instance the closure of a canal or the suspension of irrigation for a certain number of days over the whole or a portion of a canal in order to meet a more pressing demand for water elsewhere. In case it may be necessary to clear or repair any canal, the Inspector of Irrigation, or the Chief Engineer of the province as his agent, should choose, for carrying out these works, a time during which irrigation or watering may be dispensed with. Before, however, commencing any work of this nature, the Inspector of Irrigation should come to an agreement with the Mudir, in conformity with the provisions of the Regulations of December 31, 1885, fixing the powers and relations of the Inspectors of Irrigation and Mudirs. The Mudir must summon the owners of the lands or their official representatives and consult with them on the matter.

Construction of "Séfi" Water Courses.

ART. 8.—Landlords or inhabitants of a village wishing to construct on their private lands a *séfi** water course, must address their demand to the Mudir, who will send it on to the Inspector of Irrigation with his opinion and remarks. If the Inspector and Mudir are of the same opinion, the latter may grant or refuse the application as the case may be. The water course (if authorized) shall be constructed at the expense of the applicants and shall belong to them.

The right of property over this water course, however, does not, in any case, even during the lowest level of the Nile (*tahariq*), prevent the owners of neighbouring land from making use of it for the irrigation of their land, after the owners of the water course have taken from it a sufficient quantity for their lands. The owners of the neighbouring lands must in this case share with the owners of the water course the expenses of its construction and maintenance in proportion to the extent of their lands which benefit by it.

Passage of Water across another's Land, in Absence of other Means of Irrigation.

ART. 9.—When a landlord is of opinion that, without the construction of a water course over land which does not belong to him, or without using a *nili* canal† or a water course on the land of another, it is impossible for him to irrigate his land sufficiently, and the consent of the owners interested or their official representatives cannot be obtained, he will submit his complaint to the Mudir, who will transmit it with his opinion and remarks, to the Inspector of Irrigation.

The latter will examine the question on the spot, and pronounce his decision, after having heard the owners interested or their lawful representatives, if they present themselves.

He may depute for this the Chief Engineer of the province, or his personal assistant.

* *Séfi* canals are perennial, flowing during low Nile as well as during flood.

† *Nili* canals are such as flow only during the Nile flood.

The landowners interested or their official representatives must be given at least fourteen days' notice of the day and hour of the visit to the spot.

But if the water course or *nili* canal is intended to supply *séfi* water, whether by natural flow (*birrâha*) or by lifting, and the neighbouring landlords object to its construction on the grounds that it will injure the lands it will pass through, the Inspector of Irrigation will himself visit the spot and base his report on the matter on a close study of the levels.

If this report is favourable to the application, and the Mudir, after perusal of it, agrees with the Inspector, the Mudir will himself give a decision on the matter, stating his reasons.

This decision will be notified administratively to the landowners who objected.

Each of them may, within the fifteen days following the date of the notification, refer the matter to the Ministry of Public Works, whose decision shall be final.

In case of disagreement between the Mudir and Inspector, the question will also be referred to the Ministry of Public Works.

In any case, the applicant must pay the value of the land to be occupied by the new water course, and the tax imposed thereon as well as compensation for any damage done.

The sum to be paid will be fixed by the Commission mentioned in Article 27 of this Decree.

This article (9) repeals Article 10 of the Decree of March 8, 1881.*

Insufficiency of Water in a Water Course.

ART. 10.—If a landowner finds he has not sufficient water for his crops, he should present a complaint to the Mudir, who will transmit it, with his opinion and remarks, to the Inspector of Irrigation, who will examine whether the water course is sufficient for the irrigation of these crops or whether an enlargement is required, basing his opinion on the area of the land irrigated and on the nature of the crops.

If it is decided that the enlargement of the water course is necessary and the neighbouring landowner objects, the provisions of Article 9 shall be enforced, and if the purpose of the enlargement is the passage of *séfi* water, the procedure shall be according to the rules laid down in paragraphs 4, 5, 6, and 7,† of Article 9.

Change of Water Courses.

ART. 11.—If any landowner has applied for the application to the irrigation of his lands in the flood time (*ḡayadân*) of a water course other than that which he is making use of, the rules and procedure prescribed in Article 9 will be applied. But during the lowest level of the Nile (*taharîq*), change of water courses is absolutely prohibited without the consent of the owners of the lands which the new water course crosses.

Construction of Head Sluices or Erection of Lifting Machines on Canals.

ART. 12.—Should a landowner wish to construct a sluice on a canal or to erect a water-wheel (*saqia*) or lifting machine thereon, to irrigate his lands bordering on the canal, he should present his application to the Mudir, who will pass it on, with his opinion and remarks, to the Inspector of Irrigation. The latter will transmit it to the Chief Engineer of the province, who, if he approves of the application, will, in the case of a water-wheel (*saqia*) grant the necessary authorization, or, in the case of a sluice, will refer the matter to the Inspector of Irrigation. In both cases a copy of the authorization given will be sent to the Mudir with the intimation that the supply in the canal allows of the construction of the water course or the erection of the water-wheel without injury to the owners of other water courses on the same canal further down.

The Chief Engineer will, before delivery of the authorization, require from the applicant an undertaking to construct at his own cost whatever works are necessary to regulate the supply of the water course, or to keep the canal banks in good order. The Chief Engineer will designate the site where the sluice or water-wheel should be placed.

The Regulations concerning the erection of stationary or movable engines worked by steam, wind, or water power, are all laid down in the Decree of March 8, 1881.

In no case can a *saqia* or *taboot* be erected without the previous delivery of an authorization. This authorization shall be delivered free of cost.

* See Appendix, page 44.

† The legislator intended apparently to refer to paragraphs 5, 6, 7 and 8.

Suppression of a Water Course to prevent Damage.

ART. 13.—When, whether upon the application of the landowners interested or their official representatives, or on his own initiative, the Inspector of Irrigation finds that a water course is of no use for irrigation, that it obstructs drainage, that it causes infiltration or loss of water, or, in short, that it is injurious to agriculture, he shall, after agreement with the Mudir on the matter and after the latter has heard the landowners interested, transmit his opinion to the Ministry of Public Works, who will order the closure of the water course at the end of the crop, and authorize the owners of the neighbouring lands to fill it in, if it appears that irrigation is possible by means of another water course without doing any damage. In this case the land occupied by the suppressed water course shall be subjected to the regulations in force.

*Narrowing or Enlargement of a Culvert forming the Intake of a Water Course or
Alteration of the Level of its Floor.*

ART. 14.—Should the Inspector of Irrigation consider that the culvert forming the intake of a water course is too large, or that the level of its floor permits the entry of an amount of water exceeding the requirements of the land which the water course irrigates, he will inform the Mudir, who will invite the landowners or their lawful representatives to present themselves before him on a fixed day. When he has informed them of the request of the Inspector of Irrigation, and the reasons for it, they will, in case they agree with him, fix the time at which the works are to be carried out, being a time at which the crops do not require watering.

If the landowners have any objections, the matter will be referred by the Mudir to the Ministry of Public Works, who will make such order as they think fit.

If it is deemed necessary to enlarge the culvert of a water course or to lower the level of its floor, in order that there may be a sufficient volume of water, the time for this work shall also be fixed.

In any case, the expense will be defrayed by the Government.

Construction of a Drain through another's Land.

ART. 15.—When a landlord wishes for the drainage of his lands to construct a drain which would pass through the lands of another, if he cannot come to terms with the party concerned, he may submit his complaint to the Mudir, who will transmit it, with his opinion and remarks, to the Inspector of Irrigation, who will thereupon designate the course which the drain should follow. When land required for the passage of the drain cannot be had, the Inspector of Irrigation will consult the Mudir, and, if they agree, the matter will be submitted to the Ministry of Public Works, who, if they decide on the construction of the drain, will take the necessary measures.

All costs and compensation will be exclusively at the charge of those who benefit. The passage of the drain must not cause damage to the lands which it crosses.

Repairs to a Water Course or a Drain to prevent Damage.

ART. 16.—The owner of land injured by a water course or by a drain which crosses it, whether from want of clearance or from the bad state of the banks of such water course or drain, may submit a complaint to the Mudir who, after agreement with the Inspector of Irrigation or the Chief Engineer of the province, will order either the closure of the water course or the drain, or the clearance thereof, if he considers the latter work sufficient. When the water course or the drain is clearly indispensable, the Mudir shall call on the parties interested to keep it in good repair or to pay compensation to the owner for the damage done to his lands by the said water course or drain.

Substitution of one Water Course for another.

ART. 17.—If in the opinion of a landowner the position of a water course crossing his lands renders their irrigation very difficult, and he wishes to substitute another for it, he should present an application to the Mudir, who will transmit it with his opinion and remarks to the Inspector of Irrigation, and if they agree, the Inspector will permit the suppression of the water course and the substitution for it of another at the cost of the land-

owner, provided that the new water course fulfils in all respects the purpose for which it was intended and is in no respect inferior to the old one, and that the old one be not closed until the new one is opened.

But if the water course only benefits the owner of the land that it crosses, he may on his own land substitute another for it without applying for authorization.

Of the Difficulties that may arise regarding the Repair of a Water Course.

ART. 18.—If any person complains to the Mudir that those interested in a water course together with him are not agreed as to the repairs thereof, the Mudir may thereupon direct the Chief Engineer to enquire into the complaint on the spot. If it appears that the repairs to the water course are necessary, the Mudir should call upon those interested to carry them out.

But if these latter find this very difficult, whether from want of sufficient men in their villages or from their want of means, the Government may undertake the execution of the work at its own cost, and recover the amount of the cost from those interested on terms which the Mudir shall fix in accordance with their means. But the Government may forego the recovery of the money from them if their want of means is established. The Minister of the Interior will decide finally on cases of want of means.

Filling in of Water Courses or Drains or Destruction of their Banks.

ART. 19.—If a complaint is presented to the Mudir by a landlord that one of his co-owners in a water course or drain, the maintenance of which is at the charge of the proprietors, in accordance with the provisions of Article 2, has destroyed the banks, or filled up or appropriated any part thereof, the Mudir will transmit the complaint, with his opinion and remarks, to the Inspector of Irrigation, who will go to the spot in person, or send the Chief Engineer of the province, after having given those interested at least fourteen days' notice in advance. If it appears that there has in fact been a demolition or filling in, the Inspector will make an estimate of the work required for the restoration of the water course or the drain to its previous condition, and will inform the Mudir thereof so that he may compel the offender, by administrative measures, to restore the damage done. In case of refusal on his part he will be compelled to bear the expenses.

In case an owner or a tenant should complain to the Mudir that the water of the water course which served him for irrigation has been intercepted, the Mudir will transmit the complaint, with his opinion and remarks, to the Inspector of Irrigation, as stated in the first paragraph of this article, who will himself visit the spot or depute the Chief Engineer of the province for the purpose, after having given notice to the parties interested at least fourteen days in advance. If it is proved that the complainant actually irrigated his lands by means of the said water course the preceding year, the Inspector of Irrigation will inform the Mudir, who will take the necessary steps administratively in order to have things restored to their former condition; and, in order that in the future there may be no opposition to the use of the water course, the Mudir will immediately order the execution of these measures at the expense of the person or persons who had intercepted the water course.

These expenses will, in all the foregoing cases, be recovered in the manner laid down in the Decree of March 25, 1880.

Removal of Trees planted on Banks and Slopes of Canals.

ART. 20.—If it is proved that the trees planted on the banks, the slopes, or the berms of a canal, are private property, and that these trees by their growth delay the flow of the water in the canal or interrupt the navigation on it, or obstruct the passage along the canal banks, the Inspector of Irrigation or the Chief Engineer of the Province should direct the owner to remove them. If he does not comply within a period of eight days, the Inspector, after having obtained the written approval of the Mudir, shall order their removal or the trimming of the branches, and the sale of the wood, and the payment of the price to the owner after deduction of the costs.

Permission to Cultivate the Banks or the Beds of Canals.

ART. 21.—The cultivation of banks not used for traffic and of the beds of *nili* canals is permitted in accordance with the ordinary custom; the cultivator thereof can, however, claim nothing from the Government on account of injury to his cultivation caused by necessary works of clearance or repair.

The Inspectors of Irrigation will warn their subordinates who are carrying out these works to take precautions as far as possible for the prevention of injury to standing crops.

The tenant of free State lands shall not be called upon to pay rent for land the crop of which has been injured by a work of public utility executed before it was ripe ; on the contrary, the value of the injured crop shall be made good to him.

Transformation of a Cultivated Bank into a Public Road.

ART. 22.—If circumstances require that the bank of a canal which has usually been cultivated should be made into a road for traffic or if for any other reason it be desired to prevent cultivation thereon, the Inspector of Irrigation shall call on the Mudir to give notice to the cultivator of this bank that cultivation will not be permitted at the end of the then existing crop. If after this notice he persists in making use of the bank, he shall have no claim against Government if the Mudir orders the removal of his crop. But if the bank is assessed for taxation, the Government should remit the tax, and declare the bank necessary for purposes of public utility.

Construction or Repair of Private Culverts in the Banks of the Nile or of a Canal.

ART. 23.—If the Inspector of Irrigation notices that a culvert placed in a bank of the Nile or of a canal, or any other protection work, is badly built or in a ruinous state, or because of any other defect constitutes a source of danger to the banks, he should notify the Mudir, who will give notice to the owner to have it repaired or renewed during the winter season within a period of forty days. If the owner does not do so the Inspector will ask the Mudir to have the work carried out within a second period of forty days.

If, after the Mudir has again given him notice, the owner of the culvert still refuses to carry out the repair or the renewal, the Mudir may thereupon have the work carried out, and the expense shall be recovered administratively from the owner in the manner laid down by the Decree of March 25, 1880.

If, at the approach of the flood season the culvert is not finished, the Inspector of Irrigation may order its immediate closure, or its final removal, should the security of the banks require it. He will notify the Mudir and arrange for the supply of water by some other means to the lands which were irrigated by this culvert.

*Works of Defence against Inundation.**

ART. 24.—If circumstances require the occupation of a piece of land, whether cultivated or not, belonging to a private individual, or the pulling down of a house or any other building situated on the said land, with the view of carrying out protective works against inundation, the area of land thus occupied shall be measured ; the valuation of such land thus shall be made by the Commission mentioned in Article 27, after hearing the statements of the owner and of the Inspector of Irrigation, and thereupon the latter will point out approximately to the Mudir the benefits accruing from these works. The value fixed shall be paid by the Ministry of Public Works. No appeal will be allowed against the decision of the Commission.

In case of danger during the Nile flood, the Mudir may take the necessary measures at once ; he may occupy land cultivated or uncultivated, or pull down a house or any other building, to carry out urgent works of protection. In this case the amount of the damages will be estimated by the Mudir or his deputy in concert with the Chief Engineer, or the Engineer of the Markaz and four notables (Omdas), two being chosen by the parties interested and two by the Mudir. In case of equality of votes, the vote of Mudir or his deputy shall give the preponderance. The amount of the damages shall be paid by the Ministry of Public Works.

Deviation of the Course of the Nile.

ART. 25.—Should the course of the Nile deviate, so that a small island or an alluvial bank (*tark bahr*) is formed in front of a bank on which is erected a duly authorized lifting machine, and should the Government see fit to sell or let this island or bank, the owner of this machine shall have full right to dig a channel across the land thus formed so that the water may flow to his machine, without any liability to pay anything on this account.

* See the law as to expropriation (Law No. 5, 1907), Articles 22 and 23 of which appear to replace this article.

Loading and Unloading of Boats.

ART. 26.—Owners of boats may at all times load and unload their boats at all the landing places (*morada*) appointed for the purpose, whether on the banks of the Nile or of canals, provided that no injury occurs to the banks and that the traffic be not impeded.

If the landing place is separated from the water by lands belonging to private individuals, and access to such landing place by other means is impossible, the boat-owners should come to terms with the landowners as to the alignment of a way for the passage of the cargo of their ships in consideration of the payment of a reasonable sum as rent. In the case of opposition on the part of the owner of the land, he is compelled to accept the rent fixed by the Commission mentioned in Article 27.

In general, boat-owners are not permitted to build or repair boats except on the berm next the water.

Valuation Commissions.

ART. 27.—In case of disagreement between parties as to the amount of the compensation due, either for the lands necessary for the construction of a water course or drain, or in all other cases mentioned in this Decree, a Commission is instituted to fix such compensation, composed of the Mudir or his deputy, as President, of the Chief Engineer, and of two notables (*omdas*) of the province, one chosen by each party. In case of equality of votes, the side on which the President is shall prevail. If the Chief Engineer is absent or is unable to attend the Commission, the Inspector of Irrigation may appoint in his place the principal assistant to the Chief Engineer.

Boat Owner's Claims.

ART. 28.—The owners of boats or of cargo cannot lay claim to compensation from the Government on account of delays due to the closure of a canal or on account of want of water in it or in the Nile. As regards closure, they will be warned thereof as far as possible.

Wrecking or Sinking of Boats.

ART. 29.—Should a boat be wrecked or sunk in the Nile, in a public canal or in a basin, and there is caused thereby an interruption to navigation or an obstruction to the flow of the water, the Governor or the Mudir will order the owner of the boat or the *rais* (who must inform the owner of the cargo) to take away his boat, and should he not comply within eight days from the date of the order, the Governor or the Mudir will thereupon themselves undertake the removal at the cost of the owner, and if any damage occurs to the boat or injury to the cargo during the removal the owner can lay no claim against the Government for compensation.

Should the proprietor not pay the cost of removing his boat within fifteen days after he has been called upon to do so, the Governor or Mudir may sell the boat and cargo, and deduct from the price the cost of removal and pay the balance to the owner. If the cost of removal exceeds the price of the boat and of the cargo, and the proprietor is indigent, the excess cost shall be borne by the Government.

If the boat is wrecked, either in a narrow canal or in a lock, or in front of the entrance to a lock or a regulator, etc., and causes interruption to navigation or renders it difficult, or lessens the supply of water in the canal or from a lock or regulator, the Inspector of Irrigation will have the said boat removed immediately from its dangerous position and will at the same time inform the Mudir. The cost of removing the boat will be borne by Government, but the owner will have no claim against Government for damage occurring whether to the boat, accessories, or cargo during the removal. As for the procedure to be followed after the boat has been removed from its dangerous position, it will be as laid down in the first part of this article.

*Establishment of Ferries on Canals.**

ART. 30.—The authorization of the Ministry of Finance is not sufficient for the establishment of ferries (*me'addia*) on canals, but the sanction of the Inspector of Irrigation is also

* Ferries on canals are no longer subject to any dues, and authorization by the Ministry of Finance is no longer necessary.

required for their establishment and the selection of their site. In the case of old ferries, if the Inspector of Irrigation considers that their existence at their present situation is injurious to irrigation or navigation, and that it is possible to remove them to a neighbouring spot without injury to the traffic, he should ask the Mudir to remove them. If the removal is difficult, the Inspector of Irrigation and the Mudir will, after consultation, refer the matter to the Ministries of Finance and Public Works, who will decide, if need be, on the suppression of the ferries. In this case the ferry will be exempted from taxes, and replaced by a bridge for public traffic; the owners of the ferry will have no claim against Government for compensation.

Boats not to be taxed.

ART. 31.—It is forbidden, under pain of punishment by the penalties provided in the Penal Code, to subject to the payment of any due on their boats, boat-owners authorized to load or unload on the banks of the Nile, of a canal, or of a public drain, or to compel them to make such payment.

Various Offences.

ART. 32.—The offenders set forth below will be liable to imprisonment for a period of from fifteen days to two months, and to a fine at least equal to the amount of the expense of restoration as fixed by the Ministry of Public Works, but this fine must not exceed twice the amount of such expenses.

When the offence does not involve a material restoration, the fine imposed in the manner contemplated by the preceding paragraph will be replaced by a fine not exceeding L.E. 20.*

The said offenders are :—

1.—Persons who perform any of the following acts without special authorization :—

(a) The erection of a bank or throwing in of stone or any other act which interrupts the flow of water.

(b) The opening or closing of lock gates or interference with any apparatus employed to protect bridges.

(c) The removal of any bank placed in a canal with a view to damming it or reducing its supply.

(d) The erection on the banks of the Nile, or of canals or public drains, of any sort of building, water-wheel, *saqia*, pump, etc. All buildings or lifting machines erected under these conditions will be immediately removed.

The erection of *shadûfs*, *nattalas*, and Archimedian screws is permitted without authorization, providing that no cutting or damage be done to the banks.

(e) The making of a cut in the banks of the Nile or an irrigation or drainage channel, or the construction of a water sluice.

(f) The removal of the earth of banks.

(g) The making of any change whatever in a lock, or a masonry culvert (whether this lock or culvert be public or private property) constructed on the bank of the Nile or on a public canal.

(h) The removal of earth, stone, timber, or any other materials of the banks of the Nile or of the canals, or the materials of any other work of protection, or the performance of any act of a nature to damage the masonry works.

Provided the Government appoint watchmen to guard these masonry works, the sheikhs of the villages to whose charge they have been committed shall be responsible administratively to the Government if they fail to report any such acts.

2.—Any person burying a carcase in the banks.

3.—Persons who take water from a canal, whether by opening the head of the canal, or of the water course, or by cutting the banks, or by lifting the water artificially on days when the Inspector of Irrigation or any other duly authorized authority shall have made known that water shall not be taken from the canal for irrigation.

* See Law No. 20, 1909, Article 1.

Diverting Drainage Water into Public Canals, etc.

ART. 33.—Persons committing the following offences will be liable to a fine of from P.T. 25 to P.T. 200 and to imprisonment for a period of from five to thirty days.

The said offences are :—

1.—Diversion of drainage water into a public canal without the written authorization of the Inspector of Irrigation.

2.—The erection of a bridge over a canal, whether a permanent or a temporary bridge, or the laying down of a pipe or a syphon in it, without special authorization.

Depositing Spoil on Canal Slopes, Berms, etc.

ART. 34.—Persons committing the following offences will be liable to a fine of from P.T. 10 to P.T. 50 and to imprisonment for a period of from twenty-four hours to fifteen days.

The said offence are :—

1.—Depositing on the slopes or the berms of a canal the spoil resulting from the clearance or from the digging of a water course, or from the channel of a *sagya* or an engine.

2.—Causing damage to the berms of a public drain by the rush of water discharged from the fields, or obstructing the bed of a drain by the mud or the sand brought in from without by the rush of water.

3.—Erection in a canal of stakes for fastening fishing nets.

Throwing Carcases into Canals, etc.

ART. 35.—Any person throwing into the Nile, a canal, or public drain the carcase of an animal or any other substance which pollutes the water, will be liable to a fine of P.T. 200.

The guardians in charge must take the carcase from the water and bury it.

Separate Infliction of Penalties of Articles 32, 33, 34.

ART. 36.—The penalties of fine and imprisonment mentioned in Articles 32, 33 and 34 may be separately inflicted.

Offender to bear Cost of Restitution.

ART. 37.—In addition to prosecution for the above mentioned offences, the offender will always be responsible for restoring the places to their former condition. Should he refuse, the Government will carry out the necessary works at his expense, and recover the amount from him in the manner laid down in the Decree of March 25, 1880.

Commission for trying Offences.

ART. 38.—Sentence will be delivered by an Administrative Commission composed of the Mudir, the Chief Engineer or his deputy, and three notables (*omdas*) of the same province, nominated by the Ministry of the Interior. The sentence of the Commission will be given according to the majority of votes.

No appeal will be allowed if the sentence only inflicts a fine.

In the case of a sentence to imprisonment, the party condemned may appeal to a Special Committee sitting at the Ministry of the Interior, and composed of the Under-Secretary of State of that Ministry as President, of a Khedivial Counsellor, and of a delegate from the Ministry of Public Works. The appeal shall be entered by a written notice presented to the Mudiriya or to the Governorate within the three days following the delivery of the sentence. It will only be admitted if the appellant proves at the time of the presentation of the notice that he has paid the fine and costs of restitution to which he has been condemned, preserving his right to reimbursement in case of acquittal.

Procedure to be followed before the Commission.

ART. 39.—Special Regulations will be drawn up by the Ministry of the Interior establishing the procedure to be followed whether before the Administrative Commission or before the Special Committee.

Responsibility of Sheikhs and Others in Regard to Lands belonging to State Domains and the Daira Sania.

ART. 40.—The sheikhs and watchmen of villages or hamlets (*kafrs*), the agents of estates (*shifliks*) or farms (*ezabs*) belonging to the State Domains or the Daira Sania, shall be responsible for the safeguard of the banks and canals and of all masonry works within the range of their particular control and which have been confided to their charge. In case of an offence they are held personally liable for the cost of restoration of the works if the perpetrators of the offence remain unknown.

Procedure for Recovery of Expenses and Fines.

ART. 41.—The amount of expenses and fines will be recovered in conformity with the provisions of the Decree dated March 25, 1880. *In case of non-recovery of the fine, the condemned shall undergo twenty-four hours imprisonment for each P.T. 30 of fine. This imprisonment shall be ordered by the Mudir.**

Repeal of Previous Provisions.

ART. 42.—All such parts of previous provisions as are inconsistent with this Our Decree are repealed.

Ministers charged with Execution of the Decree.

ART. 43.—The Ministers of the Interior, of Finance, of Public Works and of Justice, are charged, each as far as he is concerned, with the execution of this Our Decree.

Given at the Palace of Abdine, Shaban 16, 1311 (February 22, 1894).

ABBAS HILMI.

By the Khedive,

RIAZ.

President of the Council of Ministers,

Minister of the Interior.

BOUTROS GHALI,
Minister of Finance.

AHMED MAZLOUM,
Minister of Justice.

MOHAMED ZEKI,
Minister of Public Works.

* Words in italics are repealed by Article 7, Law No. 15, 1904. See Articles 2 and 4 of that law.

APPENDIX.*

Article 10 of Decree of March 8, 1881.

In supersession of Article 7, the Ministry of Public Works can, as an exception, authorize the use of a public *nili* canal to conduct the water raised by the engine to the lands it is destined to irrigate, and this authorization is granted under the following reservations :—

1.—The permission is only granted for one summer season (*saison d'été*), which ends when the water enters the canal by natural flow.

2.—The permission is only granted if the landowners who use this *nili* canal have given their general consent to this permission.

3.—If dams are to be at the head or in the course of a *nili* canal, they must be of earth and must be removed by the proprietor of the engine, and if need be, by the proper authorities, but at his own cost, risk and peril, before Nile water flows naturally into the canal.

4.—Finally, the proprietor of the engine is alone responsible to parties for all damage done by breaches in the banks, percolation, or delay in the removal of the dams at the moment of the supply.

Article 7 runs as follows :—

The licence to erect a stationary or portable engine does not include the right for the licensee to set up a machine to take water from a canal or from the Nile. It does not lay the Government under any obligation to maintain a continuous supply of water to the engine. For the passage of water raised by the engine, the licensee must arrange with his co-partners or other parties whose lands it is necessary to cross, without any intervention of any sort on the part of the Government.

For the passage of water across waste lands or other lands belonging to Government, the licensee must obtain special permission.

It is forbidden to make water courses for the passage of water (raised by such engine) either along the banks of the Nile or the canals, or along the berms or slopes of these banks.

* See page 36.

APPENDIX "I."

Amendments to the Canal Act.

Amendments introduced into the Canal Act since 1894 are :—

(a) The Arrêté of July 16, 1898 by the Ministry of the Interior in execution to Article 39 of the 1894 Decree, which outlines the procedure to be followed by the Commission of Contraventions set up in virtue of Article 38 of the 1894 Decree.

(b) By Article 7 of Law No. 15 of November 28, 1904, Article 41 of the 1894 Decree was repeated in respect of non-recovery of fine. Articles 2, 3 and 4 of Law No. 15 bear on this matter and are as follows :—

"ART. 2.—Le recouvrement de toute somme due à l'Etat en raison d'une condamnation prononcée par une Commission ou Autorité Administrative, pourra être poursuivi par la voie de la contrainte par corps conformément aux dispositions du Code d'Instruction Criminelle. Il en sera de même pour le recouvrement des sommes dues à l'Etat en vertu de constatations faites par les autorités compétentes en conformité des lois et règlements et tenant lieu de condamnation."

"ART. 3.—La contrainte par corps pourra être remplacée par un travail manuel ou industriel conformément aux dispositions du dit Code."

"ART. 4.—L'autorité administrative par laquelle les mandats pour l'exécution des condamnations à l'emprisonnement et de la contrainte par corps, doivent être décernés et devant laquelle l'option pour un travail manuel ou industriel doit être faite, sera désignée par arrêté du Ministre intéressé."

(c) By Law of July 13, 1909, the following addition at the end of Article 32 of the 1894 Decree was made :—

"Toutes les fois que la contravention ne donne pas lieu à une restitution matérielle, l'amende établie de la façon prévue au 1er paragraphe sera remplacée par une amende ne dépassant pas L.E. 20."

APPENDIX “J.”

**Loi sur l'Expropriation pour cause d'Utilité Publique
devant les Tribunaux Indigènes.**

No. 5.

Nous, Khédive d'Égypte,

Vu la Loi du 24 décembre 1906, No. 27, réglant l'expropriation pour cause d'utilité publique devant les Juridictions Mixtes ;

Vu les Décrets des 17 février et 12 juin 1896, réglant la même matière par devant les Tribunaux Indigènes ;

Afin d'assurer l'uniformité de la législation applicable devant les deux juridictions sus-visées ;

Sur la proposition de Notre Ministre des Travaux Publics et l'avis conforme de Notre Conseil des Ministres ;

Le Conseil Législatif entendu ;

DÉCRÉTONS :

ART. 1.—L'expropriation des biens immeubles pour cause d'utilité publique, ne peut avoir lieu qu'en vertu d'un décret spécial.

ART. 2.—A ce décret seront annexés :

(1) Un état contenant la désignation de chaque terrain ou bâtiment dont l'expropriation est ordonnée, avec l'indication de sa nature, de sa contenance et de ses limites ;

(2) Un tableau portant les noms, prénoms et domiciles des propriétaires qui figurent dans la Moukalafah ou au Rôle des impôts sur les propriétés bâties. Les immeubles qui ne figurent pas sur la Moukalafah, ni au Rôle des impôts sur la propriété bâtie, seront désignés dans ce tableau par les noms, prénoms et domiciles des occupants.

Un exemplaire de ces annexes sera déposé à la Moudirieh ou au Gouvernorat où il pourra en être pris connaissance.

ART. 3.—On pourra comprendre dans l'expropriation non seulement les immeubles indispensables, mais aussi, ceux avoisinants, en tout ou en partie, si l'occupation de ces immeubles est nécessaire pour mieux atteindre le but d'utilité publique qu'on se propose.

ART. 4.—Les bâtiments dont on doit exproprier une portion, seront achetés en entier, si les propriétaires le requièrent. Cette réquisition devra être faite au plus tard dans la réunion prévue à l'article 6 sous peine de forclusion.

ART. 5.—Le décret, avec ses annexes prévues à l'article 2, sera publié dans les deux *Journaux Officiels*, et affiché à l'endroit destiné aux publications, à la Moudirieh ou au Gouvernorat, et aux Tribunaux Mixte et Indigène de première instance, où sont situés les immeubles expropriés.

Un extrait de ce décret sera, en outre, signifié administrativement à chacun des propriétaires ou des occupants y indiqués, par les soins du moudir ou du gouverneur. La publication du décret dans les *Journaux Officiels* produira au profit de l'expropriant le même effet que la transcription d'un acte de transfert.

ART. 6.—Dans les quatre jours qui suivront la signification du décret, le moudir ou le gouverneur invitera par lettre recommandée l'expropriant et les propriétaires intéressés, à comparaître devant lui dans un délai de dix jours au plus, pour traiter à l'amiable sur le montant du prix.

Cette invitation sera affichée dans les localités de la situation des immeubles à exproprier.

Le procès-verbal de l'accord aura la valeur d'un titre exécutoire et sera assimilé à un acte notarié.

ART. 7.—Dans le cas où il y aurait des tiers intéressés à titre d'usufruit ou de bail, le propriétaire sera tenu de les convoquer à la séance de conciliation prévue à l'article précédent, sinon il restera seul chargé envers eux des indemnités que ces derniers pourraient réclamer.

Les locataires et les usufruitiers n'auront droit à l'indemnité à l'encontre de l'expropriant que dans le cas d'un titre ayant date certaine antérieure au décret d'expropriation. Dans ce cas, l'indemnité sera réglée en la même forme que celle due aux propriétaires.

ART. 8.—Quinze jours après la séance de conciliation, s'il n'y a pas d'opposition, la somme qui est due aux parties intéressées avec lesquelles un arrangement a eu lieu, leur sera payée sur la présentation d'un certificat du bureau des hypothèques, constatant qu'il n'y a aucune inscription sur les immeubles.

Si des oppositions ont été faites, ou s'il existe des inscriptions, la somme indisponible sera déposée à la caisse du tribunal compétent dans le ressort duquel les immeubles sont situés.

ART. 9.—Le moudir ou le gouverneur, aussitôt après la dite séance, fera dresser un tableau contenant les noms, prénoms et domiciles des propriétaires qui ne se sont pas présentés, ou qui ne sont pas tombés d'accord sur le prix ; il y désignera les immeubles expropriés à l'encontre de ces propriétaires, et le transmettra avec le décret et les autres pièces au président du tribunal compétent.

Le même tableau sera transmis au président du tribunal dans le cas où les locataires ou les usufruitiers, convoqués par le propriétaire ou intervenants, ne sont pas tombés d'accord sur l'indemnité qui leur sera allouée.

ART. 10.— Le président, dans les trois jours de la réception du dossier, nommera d'office un ou trois experts, selon l'importance de l'affaire, pour évaluer les immeubles indiqués au dit tableau, ou le montant des indemnités qui pourraient être dues aux autres parties intéressées.

Ces experts seront choisis de préférence parmi les notables de la ville ou de la province.

Il fixera dans son ordonnance, le délai dans lequel les experts devront présenter leur rapport.

Ce délai ne pourra dépasser les quinze jours.

ART. 11.—Aucun recours ne sera admis contre cette ordonnance.

Le serment sera prêté par les experts, entre les mains du président, et le procès-verbal contiendra fixation du jour et de l'heure où les opérations de l'expertise devront commencer.

ART. 12.—Il ne sera pas nécessaire de signifier aux parties ni l'ordonnance de nomination ni le procès-verbal de prestation de serment ; mais les experts devront les avertir par lettre recommandée au moins six jours avant de commencer leurs opérations, afin qu'elles puissent se rendre sur les lieux, si elles le désirent.

Le récépissé de la poste, pour chaque lettre, sera annexé au rapport.

On observera les autres règles établies au Code de procédure civile et commerciale pour les expertises.

ART. 13.—Dans le cas d'expropriation d'un immeuble, le prix devra être calculé sans tenir compte de l'augmentation de valeur résultant ou pouvant résulter de l'expropriation.

Si l'expropriation n'est que partielle, le prix consistera dans la différence entre la valeur de tout l'immeuble et la valeur de la portion qui reste au propriétaire.

ART. 14.—Lorsque, par suite de l'exécution des travaux d'utilité publique, la portion non expropriée de l'immeuble viendrait à augmenter ou à diminuer de valeur, on tiendra compte de cette augmentation ou de cette diminution ; mais la somme à déduire ou à ajouter, ne pourra jamais excéder la moitié de ce qui reviendrait au propriétaire, aux termes de l'article précédent.

ART. 15.—Il ne sera tenu, pour la fixation du prix, aucun compte des constructions, plantations ou améliorations ainsi que de tout contrat de bail ou autre, s'il résulte qu'ils ont été faits dans le but d'avoir un prix plus élevé, sauf le droit au propriétaire d'enlever, à ses frais, les matériaux et tout ce qui peut être détaché sans préjudice des travaux à exécuter.

Sont considérées comme faites dans le but sus-indiqué, sans besoin de preuve, les constructions, plantations et améliorations qui auront été entreprises après la publication du décret d'expropriation dans les deux *Journaux Officiels*.

ART. 16.—Le président du tribunal taxera les frais et honoraires dus aux experts, et transmettra le rapport avec le dossier au moudir ou au gouverneur.

ART. 17.—L'expropriant sera immédiatement avisé de cette transmission et il devra déposer à la caisse du tribunal le prix fixé par les experts.

Les frais occasionnés par le dépôt seront dans tous les cas à sa charge.

L'expropriant déposera également le montant de la taxe des experts, mais en cas de contestation, les frais de l'expertise resteront à charge de la partie qui aura succombé.

ART. 18.—Sur le vu du certificat de dépôt, le Ministre des Travaux publics ordonnera par arrêté l'occupation des immeubles expropriés.

ART. 19.—L'arrêté sera signifié administrativement à chacun des intéressés avec sommation de délaisser dans les quinze jours les immeubles.

Ce délai expiré, on pourra procéder à la prise de possession même par la force.

Si l'exécution doit s'effectuer dans la demeure d'un étranger, elle ne pourra être pratiquée sans qu'un avis préalable ait été donné au Consulat dont il relève.

ART. 20.—Dans les trente jours à partir de la signification de l'arrêté ministériel, les parties pourront attaquer l'expertise, dans les formes ordinaires, par devant le Tribunal de première instance.

Passé ce délai, l'expertise deviendra définitive.

ART. 21.—Si l'expertise a été attaquée par un ou plusieurs des propriétaires ou autres intéressés et non par l'expropriant, ces intéressés pourront retirer la somme déposée, sous les conditions énoncées à l'article 8, sans préjudice de leurs droits pour le surplus.

ART. 22.—Lorsque l'occupation temporaire d'un immeuble pour cause d'utilité publique sera reconnue nécessaire par le Ministère des Travaux publics, le moudir ou le gouverneur sera chargé de s'entendre à l'amiable avec le propriétaire sur les conditions.

Si l'accord n'est pas possible, le moudir ou le gouverneur fixera la somme à payer à titre d'indemnité et la durée de l'occupation dans les limites de deux ans au plus. Faute d'acceptation de la part du propriétaire, la dite somme sera déposée à la caisse du tribunal, et l'indemnité sera ensuite déterminée conformément aux articles 9 et suivants.

Aussitôt le dépôt fait, l'occupation de l'immeuble aura lieu même par la force et aucune opposition ne pourra l'arrêter.

Le propriétaire pourra retirer la somme déposée, sans préjudice de ses droits pour le surplus.

ART. 23.—En cas d'inondation, de rupture d'une digue, de dégâts à un pont, et, dans tous les autres cas d'urgence, le moudir ou le gouverneur pourra ordonner l'occupation temporaire des immeubles nécessaires à l'exécution des travaux de réparation ou de préservation.

Cette occupation aura lieu immédiatement après qu'il aura fait constater par l'ingénieur de la province ou par un autre expert, la nature, la contenance et l'état de ces immeubles, sans autres formalités.

Dans les trois jours suivants, le moudir ou le gouverneur fixera provisoirement la durée de l'occupation et le montant de l'indemnité due aux propriétaires des immeubles.

On observera, en cas de non acceptation de cette indemnité, les dispositions de l'article précédent.

ART. 24.—Par arrêté du moudir ou du gouverneur, si l'utilité publique l'exige, l'occupation temporaire dont il est fait mention aux articles 22 et 23, pourra être prolongée jusqu'à trois ans, moyennant le paiement d'une indemnité calculée sur la base de celle primitivement fixée. Mais, si l'occupation est nécessaire pour un délai qui dépasse trois ans, à défaut d'arrangement à l'amiable on devra procéder à l'expropriation.

ART. 25.—L'immeuble temporairement occupé devra être restitué dans le même état où il se trouvait au moment de l'occupation. Toute détérioration donnera droit à une

indemnité ; et, si par suite des détériorations, l'immeuble est devenu impropre à l'usage duquel il était destiné, le Gouvernement sera tenu de l'acheter et de payer la valeur qu'il avait au moment de sa prise en possession.

ART. 26.—Toutes les fois qu'il y aura lieu à expertise, afin de déterminer l'indemnité due pour une occupation temporaire, les experts devront aussi constater la valeur de l'immeuble et l'indiquer dans le rapport.

ART. 27.—Pour les immeubles expropriés qui appartiennent à des mineurs, incapables ou absents, ou à des établissements pieux, l'arrangement à l'amiable ne sera permis que dans le cas où l'expropriation est poursuivie par l'administration.

Le prix des immeubles fixé dans ce cas par un accord amiable et dans tous les cas par l'expertise ou par jugement, ne pourra être retiré par les tuteurs, curateurs ou administrateurs, sans une autorisation spéciale accordée par l'autorité compétente, et, s'il s'agit de wakfs qui n'ont pas la faculté d'aliéner, le prix sera versé à la caisse de l'Administration générale des Wakfs, si le wakf exproprié est musulman ; dans les autres cas, il sera remis à l'autorité dont ce wakf relève, pour telles fins prescrites par la loi régissant le dit wakf.

ART. 28.—Le paiement du prix fait en conformité des articles précédents, aux propriétaires indiqués dans le décret, comporte libération complète.

L'expropriant ne pourra plus être recherché par qui que ce soit, et les immeubles resteront purgés de toutes espèces d'inscriptions.

ART. 29.—Les actions en résolution, en revendication et toutes autres actions réelles, ne pourront arrêter l'expropriation ou en empêcher les effets. Le droit des réclamants sera transporté sur le prix, et l'immeuble en demeurera affranchi.

ART. 30.—Les Décrets des 17 février et 12 juin 1896 sont abrogés.

ART. 31.—La présente loi entrera en vigueur le 3 mai 1907.

Nos Ministres sont chargés, chacun en ce qui le concerne, de l'exécution du présent décret.

Fait au Palais d'Abdine, le 11 Rabi Awal 1325 (24 avril 1907).

ABBAS HILMI.

Par le Khédive :

Le Président du Conseil des Ministres,
Ministre de l'Intérieur,
MOUSTAPHA FAHMY.

Le Ministre des Travaux Publics,
FAKHRY.

Le Ministre des Affaires Etrangères,
BOUTROS GHALI.

Le Ministre des Finances,
AHMED MAZLOUM.

Le Ministre de la Justice,
IBRAHIM FOUAD.

Le Ministre de la Guerre,
MOHAMED ABANI.

Le Ministre de l'Instruction Publique,
SAAD ZAGLOUL.

(Traduction.)

APPENDIX “ K.”

Loi sur l'Expropriation pour Cause d'Utilité Publique.

Nous, Khédive d'Égypte,

Vu le Règlement d'organisation judiciaire pour les procès mixtes en Égypte ;

Après accord intervenu entre Notre Gouvernement et les Puissances qui ont adhéré à la réforme judiciaire ;

Sur la proposition de Notre Ministre des Travaux Publics et l'avis conforme de Notre Conseil des Ministres ;

DÉCRÉTONS :

ART. 1.—L'expropriation des biens immeubles pour cause d'utilité publique, ne peut avoir lieu qu'en vertu d'un décret spécial.

ART. 2.—A ce décret seront annexés :

(1) Un état contenant la désignation de chaque terrain ou bâtiment dont l'expropriation est ordonnée, avec l'indication de sa nature, de sa contenance et de ses limites ;

(2) Un tableau portant les noms, prénoms et domiciles des propriétaires qui figurent dans la Moukalafah ou au Rôle des impôts sur les propriétés bâties. Les immeubles qui ne figurent pas sur la Moukalafah, ni au Rôle des impôts sur la propriété bâtie, seront désignés dans ce tableau par les noms, prénoms et domiciles des occupants.

Un exemplaire de ces annexes, sera déposé à la Moudirieh ou au Gouvernorat où il pourra en être pris connaissance.

ART 3.—On pourra comprendre dans l'expropriation non seulement les immeubles indispensables, mais aussi, ceux avoisinants, en tout ou en partie, si l'occupation de ces immeubles est nécessaire pour mieux atteindre le but d'utilité publique qu'on se propose.

ART. 4.—Les bâtiments dont on doit exproprier une portion, seront achetés en entier, si les propriétaires le requièrent. Cette réquisition devra être faite au plus tard dans la réunion prévue à l'article 6 sous peine de forclusion.

ART. 5.—Le décret, avec ses annexes prévues à l'article 2, sera publié dans les deux *Journaux Officiels*, et affiché à l'endroit destiné aux publications, à la Moudirieh ou au Gouvernorat, et aux Tribunaux Mixte et Indigène de première instance, où sont situés les immeubles expropriés.

Un extrait de ce décret sera, en outre, signifié administrativement à chacun des propriétaires ou des occupants y indiqués, par les soins du Moudir ou du Gouverneur. La publication du décret dans les *Journaux Officiels* produira au profit de l'expropriant le même effet que la transcription d'un acte de transfert.

ART. 6.—Dans les quatre jours qui suivront la signification du décret, le Moudir ou le Gouverneur invitera par lettre recommandée l'expropriant et les propriétaires intéressés, à comparaître devant lui dans un délai de dix jours au plus, pour traiter à l'amiable sur le montant du prix.

Cette invitation sera affichée dans les localités de la situation des immeubles à exproprier.

Le procès-verbal de l'accord aura la valeur d'un titre exécutoire et sera assimilé à un acte notarié.

ART. 7.—Dans le cas où il y aurait des tiers intéressés à titre d'usufruit ou de bail, le propriétaire sera tenu de les convoquer à la séance de conciliation prévue à l'article précédent, sinon il restera seul chargé envers eux des indemnités que ces derniers pourraient réclamer.

Les locataires et les usufruitiers n'auront droit à l'indemnité à l'encontre de l'expropriant que dans le cas d'un titre ayant date certaine antérieure au décret d'expropriation. Dans ce cas, l'indemnité sera réglée en la même forme que celle due aux propriétaires.

ART. 8.—Quinze jours après la séance de conciliation, s'il n'y a pas d'opposition, la somme qui est due aux parties intéressées avec lesquelles un arrangement a eu lieu, leur sera payée sur la présentation d'un certificat du bureau des hypothèques, constatant qu'il n'y a aucune inscription sur les immeubles.

Si des oppositions ont été faites, ou s'il existe des inscriptions, la somme indisponible sera déposée à la caisse du Tribunal compétent dans le ressort duquel les immeubles sont situés.

ART. 9.—Le Moudir ou le Gouverneur, aussitôt après la dite séance, fera dresser un tableau contenant les noms, prénoms et domiciles des propriétaires qui ne se sont pas présentés, ou qui ne sont pas tombés d'accord sur le prix ; il y désignera les immeubles expropriés à l'encontre de ces propriétaires, et le transmettra avec le décret et les autres pièces au Président du Tribunal Compétent.

Le même tableau sera transmis au Président du Tribunal dans le cas où les locataires ou les usufruitiers, convoqués par le propriétaire ou intervenants, ne sont pas tombés d'accord sur l'indemnité qui leur sera allouée.

ART. 10.—Le Président, dans les trois jours de la réception du dossier, nommera d'office un ou trois experts, selon l'importance de l'affaire, pour évaluer les immeubles indiqués au dit tableau, ou le montant des indemnités qui pourraient être dues aux autres parties intéressées.

Ces experts seront choisis de préférence parmi les notables de la ville ou de la province.

Il fixera dans son ordonnance, le délai dans lequel les experts devront présenter leur rapport.

Ce délai ne pourra dépasser les quinze jours.

ART. 11.—Aucun recours ne sera admis contre cette ordonnance.

Le serment sera prêté par les experts, entre les mains du Président, et le procès-verbal contiendra fixation du jour et de l'heure où les opérations de l'expertise devront commencer.

ART 12.—Il ne sera pas nécessaire de signifier aux parties ni l'ordonnance de nomination ni le procès-verbal de prestation de serment ; mais les experts devront les avertir par lettre recommandée au moins six jours avant de commencer leurs opérations, afin qu'elles puissent se rendre sur les lieux, si elles le désirent.

Le récépissé de la poste, pour chaque lettre, sera annexé au rapport.

On observera les autres règles établies au Code de procédure civile et commerciale pour les expertises.

ART. 13.—Dans le cas d'expropriation d'un immeuble, le prix devra être calculé sans tenir compte de l'augmentation de valeur résultant ou pouvant résulter de l'expropriation.

Si l'expropriation n'est que partielle, le prix consistera dans la différence entre la valeur de tout l'immeuble et la valeur de la portion qui reste au propriétaire.

ART. 14.—Lorsque, par suite de l'exécution des travaux d'utilité publique, la portion non expropriée de l'immeuble viendrait à augmenter ou à diminuer de valeur, on tiendra compte de cette augmentation ou de cette diminution ; mais la somme à déduire ou à ajouter, ne pourra jamais excéder la moitié de ce qui reviendrait au propriétaire, aux termes de l'article précédent.

ART. 15.—Il ne sera tenu, pour la fixation du prix, aucun compte des constructions, plantations ou améliorations ainsi que de tout contrat de bail ou autre, s'il résulte qu'ils ont été faits dans le but d'avoir un prix plus élevé, sauf le droit au propriétaire d'enlever, à ses frais, les matériaux et tout ce qui peut être détaché sans préjudice des travaux à exécuter.

Sont considérées comme faites dans le but sus-indiqué, sans besoin de preuve, les constructions, plantations et améliorations qui auront été entreprises après la publication du décret d'expropriation dans les deux *Journaux Officiels*.

ART. 16.—Le Président du Tribunal taxera les frais et honoraires dus aux experts, et transmettra le rapport avec le dossier au Moudir ou au Gouverneur.

ART. 17.—L'expropriant sera immédiatement avisé de cette transmission et il devra déposer à la caisse du Tribunal le prix fixé par les experts.

Les frais occasionnés par le dépôt seront dans tous les cas à sa charge.

L'expropriant déposera également le montant de la taxe des experts, mais en cas de contestation, les frais de l'expertise resteront à charge de la partie qui aura succombé.

ART. 18.—Sur le vu du certificat de dépôt, le Ministre des Travaux publics ordonnera, par arrêté, l'occupation des immeubles expropriés.

ART. 19.—L'arrêté sera signifié administrativement à chacun des intéressés avec sommation de délaisser dans les quinze jours les immeubles.

Ce délai expiré, on pourra procéder à la prise de possession même par la force.

Si l'exécution doit s'effectuer dans la demeure d'un étranger, elle ne pourra être pratiquée sans qu'un avis préalable ait été donné au Consulat dont il relève.

ART. 20.—Dans les trente jours à partir de la signification de l'arrêté ministériel, les parties pourront attaquer l'expertise, dans les formes ordinaires, par devant le Tribunal de première instance.

Passé ce délai, l'expertise deviendra définitive.

ART. 21.—Si l'expertise a été attaquée par un ou plusieurs des propriétaires ou autres intéressés et non par l'expropriant, ces intéressés pourront retirer la somme déposée, sous les conditions énoncées à l'article 8, sans préjudice de leurs droits pour le surplus.

ART. 22.—Lorsque l'occupation temporaire d'un immeuble pour cause d'utilité publique sera reconnue nécessaire par le Ministère des Travaux publics, le moudir ou le gouverneur sera chargé de s'entendre à l'amiable avec le propriétaire sur les conditions.

Si l'accord n'est pas possible, le moudir ou le gouverneur fixera la somme à payer à titre d'indemnité et la durée de l'occupation dans les limites de deux ans au plus. Faute d'acceptation de la part du propriétaire, la dite somme sera déposée à la caisse du tribunal, et l'indemnité sera ensuite déterminée conformément aux articles 9 et suivants.

Aussitôt le dépôt fait, l'occupation de l'immeuble aura lieu même par la force et aucune opposition ne pourra l'arrêter.

Le propriétaire pourra retirer la somme déposée, sans préjudice de ses droits pour le surplus.

ART. 23.—En cas d'inondation, de rupture d'une digue, de dégâts à un pont, et, dans tous les autres cas d'urgence, le moudir ou le gouverneur pourra ordonner l'occupation temporaire des immeubles nécessaires à l'exécution des travaux de réparation ou de préservation.

Cette occupation aura lieu immédiatement après qu'il aura fait constater par l'ingénieur de la province ou par un autre expert, la nature, la contenance et l'état de ces immeubles, sans autres formalités.

Dans les trois jours suivants, le moudir ou le gouverneur fixera provisoirement la durée de l'occupation et le montant de l'indemnité due aux propriétaires des immeubles.

On observera, en cas de non-acceptation de cette indemnité, les dispositions de l'article précédent.

ART. 24.—Par arrêté du moudir ou du gouverneur, si l'utilité publique l'exige, l'occupation temporaire dont il est fait mention aux articles 22 et 23 pourra être prolongée jusqu'à trois ans, moyennant le paiement d'une indemnité calculée sur la base de celle primitivement fixée. Mais, si l'occupation est nécessaire pour un délai qui dépasse trois ans, à défaut d'arrangement à l'amiable on devra procéder à l'expropriation.

ART. 25.—L'immeuble temporairement occupé devra être restitué dans le même état où il se trouvait au moment de l'occupation. Toute détérioration donnera droit à une indemnité ; et, si par suite des détériorations, l'immeuble est devenu impropre à l'usage auquel il était destiné, le Gouvernement sera tenu de l'acheter et de payer la valeur qu'il avait au moment de sa prise en possession.

ART. 26.—Toutes les fois qu'il y aura lieu à expertise, afin de déterminer l'indemnité due pour une occupation temporaire, les experts devront aussi constater la valeur de l'immeuble et l'indiquer dans le rapport.

ART. 27.—Pour les immeubles expropriés qui appartiennent à des mineurs, incapables ou absents, ou à des établissements pieux, l'arrangement à l'amiable ne sera permis que dans le cas où l'expropriation est poursuivie par l'administration.

Le prix des immeubles fixé dans ce cas par un accord amiable et dans tous les cas par l'expertise ou par jugement, ne pourra être retiré par les tuteurs, curateurs ou administrateurs, sans une autorisation spéciale accordée par l'autorité compétente, et, s'il s'agit de wakfs qui n'ont pas la faculté d'aliéner, le prix sera versé à la caisse de l'Administration générale des Wakfs, si le wakf exproprié est musulman ; dans les autres cas, il sera remis à l'autorité dont ce wakf relève, pour telles fins prescrites par la loi régissant le dit wakf.

ART. 28.—Le paiement du prix fait en conformité des articles précédents, aux propriétaires indiqués dans le décret, comporte libération complète.

L'expropriant ne pourra plus être recherché par qui que ce soit, et les immeubles resteront purgés de toutes espèces d'inscriptions.

ART. 29.—Les actions en résolution, en revendication et toutes autres actions réelles, ne pourront arrêter l'expropriation ou en empêcher les effets. Le droit des réclamants sera transporté sur le prix, et l'immeuble en demeurera affranchi.

ART. 30.—Les articles 118 à 143 inclusivement du Code Civil Mixte sont abrogés.

ART. 31.—Ces dispositions entreront en vigueur un mois après la publication qui en sera faite dans les formes prévues par l'article 35, titre I, du Règlement d'organisation judiciaire.

ART. 32.—Nos Ministres sont chargés, chacun en ce qui le concerne, de l'exécution du présent décret.

Fait au palais d'Abdine, le 24 décembre 1906.

ABBAS HILMI.

Par le Khédive :

Le Président du Conseil des Ministres,
Ministre de l'Intérieur,
MOUSTAFA FAHMY.

Le Ministre des Travaux Publics,
H. FAKHRY.

Le Ministre des Affaires Etrangères,
BOUTROS GHALI.

Le Ministre de la Justice,
IBRAHIM FOUAD.

Le Ministre des Finances,
AHMED MAZLOUM.

Le Ministre de la Guerre,
MOHAMED ABANI.

Le Ministre de l'Instruction Publique,
SAAD ZAGLOUL.

APPENDIX “L.”

Décret et Règlement concernant les Machines Élévatoires.

NOUS, KHÉDIVE D'EGYPTE,

Sur la proposition de Notre Ministre des Travaux Publics et l'avis conforme de Notre Conseil des Ministres ;

DÉCRÉTONS :

ART. 1.—Il est et demeure interdit d'établir des machines à élever les eaux d'arrosage ou de dessèchement, que ces machines soient fixes ou mobiles, qu'elles soient mues par la vapeur, par des chutes d'eau, ou par le vent, sans au préalable en avoir obtenu l'autorisation du Ministère ou des services des Travaux Publics.

Cette autorisation ne donne au bénéficiaire aucun droit de propriété, dans quelque limite que ce soit, sur le terrain du domaine public ou privé de l'Etat occupé ou traversé par les tuyaux, conduites ou aqueducs de prise d'eau et d'aspiration.

Le Gouvernement reste étranger à tous rapports entre les tiers et le bénéficiaire, et lui laisse vis-à-vis d'eux la responsabilité de tous actes dommageables ou autres occasionnés par son installation ou autrement.

ART. 2.—L'établissement des machines élévatoires fixes ne sera autorisé que sur les bords du Nil ; toutefois le Ministère des Travaux Publics pourra exceptionnellement l'autoriser sur certains canaux. Le Ministère reste seul juge de l'opportunité de l'autorisation et il se réserve toute liberté d'imposer, suivant les cas, les charges et conditions auxquelles elle sera soumise.

ART. 3.—Toute machine élévatoire fixe ou mobile est soumise à l'obligation générale de laisser complètement libre la circulation sur les digues et canaux, de respecter toutes les servitudes, de ne nuire en rien aux nécessités de l'entretien de ces digues et canaux et de la défense du pays contre les inondations.

ART. 4.—L'inexécution de toute condition ou obligation imposée par l'autorisation d'établir une machine élévatoire entraînera de plein droit le retrait de cette autorisation, sans préjudice des recours que le Gouvernement se réserve d'exercer en réparation de dommages et remboursement de dépenses occasionnées à l'Etat.

ART. 5.—Une installation autorisée pour un endroit déterminé ne pourra être déplacée que sur une nouvelle autorisation sans paiement de nouveaux droits.

ART. 6.—Le Gouvernement conserve le droit, pour cause d'utilité publique (exécution de travaux publics, danger pour les digues, les ouvrages d'art, etc. . . .), de faire déplacer toute installation autorisée.

ART. 7.—L'autorisation donnée pour installer une machine élévatoire fixe ou mobile ne comporte que le droit, pour les concessionnaires, de faire une installation pour prendre de l'eau d'un canal ou du Nil ; elle n'entraîne aucune obligation pour le Gouvernement d'assurer l'alimentation continue de la machine ; pour le passage des eaux fournies par cette machine, le concessionnaire devra s'entendre avec ses associés ou les tiers dont il aura à traverser les terrains sans intervention d'aucune sorte du Gouvernement.

Pour faire passer les eaux à travers les terres vagues ou autres terres du Gouvernement, le concessionnaire devra se munir d'une autorisation spéciale.

Il est interdit de faire des rigoles d'amenée des eaux, tant sur le long des digues des canaux et du Nil que sur le long des banquettes et des talus de ces digues.

ART. 8.—Les rigoles ou conduits pour conduire les eaux des machines aux terrains seront établis de manière à ne gêner en rien la circulation publique et les passages des eaux d'écoulement et d'irrigation, sous la réserve des droits des tiers, vis-à-vis desquels le con-

cessionnaire reste seul responsable ; le Gouvernement imposera pour le passage sous les digues et routes, et au-dessus et au-dessous des canaux, tous les travaux qu'il jugera convenables.

ART. 9. Pour cause d'utilité générale, en cas d'étiage exceptionnel, ou quand le débit d'un canal deviendra notoirement inférieur aux besoins des cultures qu'il dessert, les services des Travaux Publics pourront, par mesure générale applicable à tout un canal ou à un seul bief d'un canal, ordonner l'arrêt momentané des machines élévatoires ou fixer une marche réduite de celles-ci, en tenant compte, s'il y a lieu, de l'importance relative des appareils et des terrains qu'ils arrosent, sans qu'en pareil cas, le Gouvernement puisse encourir aucune responsabilité pour dommages causés aux cultures.

ART. 10.⁽¹⁾—Par dérogation à l'article 7, le Ministère des Travaux Publics pourra exceptionnellement autoriser l'usage d'un canal Nili public, pour conduire les eaux de la machine élévatoire jusqu'aux terrains à arroser, et ceci sous les réserves suivantes :

(1) Cette permission ne sera accordée que pour une saison d'étiage qui prendra fin dès que l'eau du Nil pourra entrer librement dans le canal ;

(2) Elle ne sera accordée que si les propriétaires des terrains qui ont l'usage de ce canal Nili ont donné leur assentiment général à cette permission ;

(3) S'il est fait des digues de retenue à la prise d'eau ou sur les parcours d'un canal Nili, elles seront en terre et devront être enlevées par les soins du propriétaire de la machine, au besoin, par les soins de l'autorité, mais aux frais, risques et périls de ce dernier, avant que l'eau du Nil puisse entrer librement dans le canal ;

(4) Enfin le propriétaire de la machine est seul responsable vis-à-vis des tiers pour tous dommages occasionnés par rupture des digues, infiltration et retard dans l'enlèvement des digues au moment de l'alimentation.

ART. 11.—Toute personne qui, contrairement aux dispositions antérieures au présent décret, aurait installé une machine fixe ou mobile sans autorisation, devra avant le 31 août 1881⁽²⁾, faire la demande d'une autorisation dans les conditions exigées par ce Décret et du Règlement qu'il comporte. Toute personne munie d'une autorisation antérieure au présent Décret devra, avant la même date, se pourvoir d'une nouvelle autorisation dans les mêmes conditions, et ne sera pas astreinte au paiement des droits.

ART. 12.—Après le 31 août 1881, toute machine établie en contravention de l'article 11 ci-dessus sera arrêtée dans son fonctionnement.

ART. 13.—Les propriétaires des machines élévatoires sont responsables des accidents ou dommages qui pourront être occasionnés par ces machines.

Le Gouvernement se réserve cependant le droit d'exercer, dans l'intérêt public, la surveillance de la conduite de ces machines, sans pour cela dégager les propriétaires de la responsabilité qui leur incombe⁽³⁾.

ART. 14. Un règlement pour l'application du présent décret et à l'observation duquel les intéressés doivent être soumis sera dressé par les soins du Ministère des Travaux Publics.

ART. 15.—Notre Ministre des Travaux Publics est chargé de l'exécution du présent décret.

Fait au Palais d'Abdine, le 8 mars 1881 (8 Rabi Akher 1298).

Signé : MÉHÉMET THEWFIK.

Par le Khédive :

Le Président du Conseil des Ministres,

Signé : RIAZ.

Le Ministre des Travaux Publics,

Signé : ALY MOUBARAK.

⁽¹⁾ Cet article a été modifié par l'article 9 du Décret du 22 février 1894. Voir Annex A.

⁽²⁾ Par décision du Conseil de Ministres en date du 9 juillet 1882, ce délai a été prorogé à fin août 1888.

⁽³⁾ Voir à cet effet l'article 6 du 5 novembre 1900 (Annexe B).

ARRÊTÉ MINISTÉRIEL.

Dispositions Réglementaires concernant les Machines Élévatoires.

Le Ministre des Travaux Publics, vu l'article 14 du Décret du 8 mars 1881 concernant l'établissement des machines élévatoires ;

ARRÊTE :

ART. 1.—Toute demande en autorisation d'établissement de machine élévatoire non fixe doit se faire sur papier timbré et être adressée à la Moudirieh ou à la Mohafezah dans la circonscription de laquelle se trouve le lieu d'établissement projeté.

Elle doit contenir les indications suivantes :

- (1) Le genre de machine et de pompe avec mention de la puissance et des principales dimensions ;
- (2) Le lieu d'établissement avec plan ;
- (3) Le travail auquel la machine est destinée, arrosage ou desséchement ;
- (4) Les noms, prénoms, professions, nationalités, demeures des propriétaires des terrains à arroser ou à dessécher ;
- (5) Le temps pour lequel l'autorisation est demandée.

ART. 2.—La demande en autorisation, inscrite à la Moudirieh ou à la Mohafezah sur un registre spécial, reçoit un numéro d'ordre après paiement d'un droit fixe de cent piastres par machine pour frais d'instruction, elle est ensuite transmise pour instruction à l'ingénieur en chef de la circonscription de laquelle relève la Moudirieh ou la Mohafezah.

ART. 3.*—L'ingénieur en chef de la circonscription formule s'il y a lieu et signe l'autorisation qui doit contenir :—

(1) L'obligation pour le bénéficiaire de se conformer au présent règlement comme à toute disposition législative ou réglementaire ultérieure ;

(2) La description de l'emplacement exact de la machine, avec croquis à l'appui s'il y a lieu ;

(3) Les conditions spéciales à cette machine, notamment celles relatives à l'aqueduc sous la digue du canal à la prise d'eau ; au mode de fermeture de celle-ci, etc. . . .

L'autorisation n'étant exigée qu'en vue des nécessités des services publics, elle laisse, bien entendu, les particuliers libres de faire valoir contre le bénéficiaire leurs droits sur les terrains où la machine sera installée et de s'opposer par les voies légales à son établissement.

ART. 4.†—L'autorisation envoyée par la circonscription technique à la Moudirieh ou à la Mohafezah est visée par celle-ci et remise au bénéficiaire moyennant son visa en marge du double de l'autorisation transcrit sur le registre même d'inscription des demandes et contre paiement d'un droit de cinquante piastres (50) par cheval vapeur, sans que jamais la somme à percevoir puisse être inférieure à cinq cents piastres (500.)

ART. 5.—Toute demande en autorisation d'établissement de machine élévatoire fixe doit être adressée, sur papier timbré, au Ministère des Travaux Publics, qui délivre directe-

* Voir à cet effet la Circulaire Ministérielle No. 461 u du 21 Janvier 1904 (Annexe C).

† voir Annexe C.

ment les autorisations, s'il y a lieu ; la demande doit toujours être accompagnée des dossiers de l'installation projetée pour la machine et la prise d'eau, et, à défaut des plans mêmes de la machine, d'une description détaillée de celle-ci.

ART. 6.—Les autorisations d'établissement de machines élévatoires fixes sont soumises aux mêmes droits d'instruction et d'autorisation que celles des machines non fixes. Ces droits sont payés directement à la caisse du Ministère des Travaux Publics.

ART. 7.—Sous aucun prétexte le postulant ne pourra procéder aux travaux d'installation sans être muni de l'autorisation.

ART. 8.—Aucune machine élévatoire ne pourra être établie sur les prises d'eau, ponts-barrages, ponts ou autres ouvrages d'art d'intérêt public, ni même aux abords de ces ouvrages, si ce n'est à des distances qui seront déterminées, suivant les cas, par le Ministère des Travaux Publics.

ART. 9*.—L'autorisation prévue par l'article 5 du Décret du 8 mars 1881 sera donnée par l'ingénieur en chef de la circonscription, qui notifiera à la Moudirieh ou à la Mohafezah le déplacement qu'il aura autorisé.

ART. 10.—Le déplacement de machines prévu par l'article 6 du Décret sus-visé ne pourra être ordonné que par le Ministère des Travaux Publics. Il se fera aux frais du bénéficiaire.

ART. 11.—Toutes les dispositions réglementaires antérieures sont abrogées en ce qu'elles ont de contraire au présent règlement.

Fait au Caire, le 6 avril 1881.

Le Ministre des Travaux Publics,
Signé : ALY MOUBARAK.

* voir Annexe C.

ANNEXE A.

DÉCRET DU 22 FÉVRIER 1894.

ART. 9.

PASSAGE DES EAUX À TRAVERS LES TERRES D'AURTUI, A DÉFAUT D'AUTRES
MOYENS POUR L'IRRIGATION.

Dans le cas où un propriétaire trouverait que, sans la construction d'une rigole sur des terrains qui ne lui appartiennent pas ou sans se servir d'un canal Nili ou d'une rigole existant sur la propriété d'autres personnes il lui est impossible de pourvoir suffisamment à l'irrigation de ses terres, à défaut d'arrangement à l'amiable, avec les propriétaires intéressés ou leurs représentants légaux, il présentera sa réclamation au moudir qui la communiquera avec son avis et ses observations à l'inspecteur d'irrigation.

Ce dernier examinera la question sur les lieux et prononcera sa décision, après avoir entendu les propriétaires intéressés ou leurs représentants légaux s'ils se présentent.

Il pourra déléguer à cet effet l'ingénieur en chef de la province ou son propre adjoint.

Avis sera donné du jour et de l'heure de la descente sur les lieux aux propriétaires intéressés ou leurs représentants légaux au moins quatorze jours avant.

Mais si la rigole ou canal Nili doit servir à amener de l'eau séfi fournie par écoulement naturel ou élevée au moyen de machines, et que le propriétaire voisin s'oppose à son établissement parce qu'elle nuirait aux terrains à traverser, l'inspecteur d'irrigation ira lui-même sur les lieux et prendra pour base de son rapport l'étude précise des niveaux.

Si ce rapport est favorable à la demande et que le moudir, après en avoir pris connaissance, se trouve d'accord avec l'inspecteur, une décision motivée sera rendue par le moudir même.

Cette décision sera signifiée par voie administrative aux propriétaires opposants.

Chacun de ces derniers pourra, dans les quinze jours de la signification, la déférer au Ministère des Travaux Publics, qui prononcera en dernier ressort sur la question.

En cas de désaccord entre le moudir et l'inspecteur, la question sera également soumise au Ministère des Travaux Publics.

Le pétitionnaire devra toujours payer la valeur du terrain occupé par la nouvelle rigole et l'impôt dont il est grevé, ainsi qu'une indemnité pour les dommages causés.

La somme à payer sera fixée par la Commission mentionnée à l'article 27 du présent décret.

Cet article annule l'article 10 du Décret du 8 mars 1881.

ANNEXE B.

DÉCRET DU 5 NOVEMBRE 1900.

ART. 6.

Les machines et chaudières à vapeur destinées exclusivement à l'élévation des eaux d'arrosage ou de dessèchement, continueront à être régies par le Décret du 8 mars et le Règlement du 6 avril 1881, concernant les machines élévatoires.

Toutefois, le Ministère pourra, quand le besoin se fera sentir, appliquer à ces machines telles conditions de sûreté, prescrites au règlement ci-annexé, qu'il jugera nécessaires.

Au cas où leurs propriétaires voudraient les adapter en même temps à un usage industriel quelconque, l'autorité compétente chargée de délivrer l'autorisation pour l'exploitation de l'industrie devra, au préalable, s'entendre avec le Ministère des Travaux Publics (service des machines à vapeur) sur les conditions relatives à la sécurité publique qu'il y aurait lieu d'imposer dans l'acte d'autorisation.

**Table of Pump and Saqia Discharges and the Areas protected
by Machines of Various Sizes.**

MACHINE.	Approximate Discharge in Cubic Meters per 24 Hours.	Equivalent Number of Single Saqias.	Area watered per Day allow- ing 350 Cubic Metres per Feddian per 24 Hours.	Area irrigated in Six Days, allowing 350 Cubic Meters per Feddan per 24 Hours.	Area protect- ed in Six Days, assuming 40 per cent of the Area under self Crops.	Diameter of Pump Culvert not to exceed.
	Cubic Meters.	No.	Feddans.	Feddans.	Feddans.	Linear Meters.
Single saqia	300	1	0.8	4.8	12	0.10
Double saqia	600	2	1.7	10	25	0.15
4" pump (suction pipe) ...	1,248	4	3.5	21	53	0.20
4" pump (discharge pipe) ...	2,304	7	6	36	90	0.25
5" pump (suction pipe) ...	2,366	8	6.7	40	100	0.25
5" pump (discharge pipe) ...	3,600	12	10	60	150	0.30
6" pump (suction pipe) ...	3,408	11	10	60	145	0.30
6" pump (discharge pipe) ...	5,184	17	15	90	225	0.35
7" pump (suction pipe) ...	4,815	16	14	84	205	0.35
7" pump (discharge pipe) ...	7,056	23	20	120	300	0.40
8" pump (suction pipe) ...	6,528	22	19	114	280	0.40
8" pump (discharge pipe) ...	9,216	30	26	156	390	0.45
10" pump (suction pipe) ...	10,200	34	29	174	435	0.45
10" pump (discharge pipe) ...	14,400	48	41	246	615	0.50
12" pump (suction pipe) ...	14,688	49	42	252	628	0.50
12" pump (discharge pipe) ...	20,736	69	59	359	897	0.55
14" pump (suction pipe) ...	19,992	67	37	342	855	0.55
14" pump (discharge pipe) ...	28,224	94	85	510	1,275	0.60
15" pump (suction pipe) ...	22,994	76	65	390	980	0.60
15" pump (discharge pipe) ...	32,400	108	92	552	1,380	0.65
16" pump (suction pipe) ...	27,648	92	79	474	1,183	0.65
16" pump (discharge pipe) ...	36,864	122	105	630	1,575	0.70
18" pump (suction pipe) ...	34,992	117	100	600	1,495	0.70
18" pump (discharge pipe) ...	46,656	155	133	798	1,995	0.75
20" pump (suction pipe) ...	43,200	144	123	738	1,848	0.80
20" pump (discharge pipe) ...	57,600	192	164	984	2,460	0.95
24" pump (suction pipe) ...	62,208	207	117	1,062	2,660	1.00
24" pump (discharge pipe) ...	82,944	276	237	1,422	3,555	1.15
30" pump (suction pipe) ...	97,200	324	277	1,662	4,155	1.25
30" pump (discharge pipe) ...	129,600	432	370	2,220	5,550	1.45

The above pumps, where diameter of discharge pipes is given, apply to the new type of helical pumps having their suction end larger than their discharge; and where diameter of suction pipes is given, apply to the old type centrifugal pumps having their suction and discharge ends of equal diameter.

ANNEXE C.

CIRCULAIRE DU MINISTÈRE DES TRAVAUX PUBLICS EN DATE DU
21 JANVIER 1904. No. 461—U.

Me référant à ma lettre du 30 décembre dernier No. 7733 relative à la préparation et à la livraison de rokhsas, par le Service Technique, pour machines locomobiles et pompes, j'ai l'honneur de vous transmettre à cet effet les instructions complémentaires suivantes que je vous prie de communiquer à vos inspecteurs respectifs.

Les demandes de rokhsas pour l'irrigation continueront, ainsi qu'il a été fait jusqu'à présent, à être adressées aux Services des Irrigations, lesquels fixeront, dans chaque cas la force de la machine et le diamètre de la pompe à autoriser. Après l'achèvement de ces formalités, la demande avec les pièces qui l'accompagnent seront transmises au Service Technique pour être complétées.

Le Service Technique procédera alors à l'instruction de l'affaire comme il le fait pour les machines fixes : il indiquera dans la rokhsa les conditions de sûreté et fera les démarches nécessaires pour faire signer la rokhsa par le pétitionnaire. En délivrant la rokhsa, ce service prendra les dispositions nécessaires en vue de l'examen et de l'épreuve de la machine.

Le Service des Irrigations est prié de ne permettre l'installation d'aucune machine avant qu'une autorisation par écrit (rokhsa) n'ait été définitivement délivrée. En outre, aucune permission verbale pour l'installation d'une machine ne devrait être accordée à l'insu du Service Technique, étant donné que ce Service est tenu de prendre les dispositions nécessaires en vue de la préparation des plans des fondations et de l'installation, ainsi que pour l'inspection de la machine.

De même, le fonctionnement d'aucune machine ne devra, pour n'importe quel motif être autorisé, avant qu'un certificat d'épreuve satisfaisante n'ait été délivré au propriétaire.

En cas de renouvellement d'une rokhsa, il doit être procédé comme s'il s'agissait d'une nouvelle installation en ce qui concerne les conditions de sûreté, comprenant l'installation, les appareils nécessaires, l'inspection et l'épreuve.

Signé : GARSTIN.

COPIE D'UNE LETTRE NO. 7733, DU 30 DÉCEMBRE 1903, ADRESSÉE PAR LE MINISTÈRE
DES TRAVAUX PUBLICS AUX INSPECTEURS GÉNÉRAUX DES IRRIGATIONS, BASSE
ET HAUTE EGYPTÉ :—

Me référant à votre lettre No. en date du décembre 1903, j'ai l'honneur de vous informer, ainsi qu'il a été convenu, que toutes les rokhsas pour machines à vapeur, fixes ou locomobiles destinées à actionner des pompes seront à l'avenir délivrées par le Service Technique.

Le Service des Irrigations continuera toutefois à statuer, ainsi qu'il le fait à présent, sur le diamètre de la pompe et la force de la machine, mais dès qu'il aura décidé d'autoriser une machine quelconque, il devra communiquer au Service Technique tous les détails relatifs à cette machine pour lui permettre d'en délivrer la rokhsa.

Veillez.

Signé : W. E. GARSTIN.

Arrêté Ministériel No. 46 concernant les Machines Élévatoires.

LE MINISTRE DES TRAVAUX PUBLICS,

Vu l'article 14 du Décret en date du 8 Rabih-Tani 1298 (8 mars 1881) concernant les machines élévatoires ;

Vu l'Arrêté Ministériel du 6 avril 1881 concernant les dispositions réglementaires pour les machines élévatoires ;

Sur la proposition de Monsieur le Sous-Secrétaire d'Etat ;

ARRÊTE :

ART. 1.—Toute demande d'autorisation pour l'installation d'une machine élévatoire doit être présentée sur papier timbré et adressée à l'Inspecteur du Cercle d'Irrigation dans la circonscription duquel se trouve l'emplacement où doit avoir lieu cette installation.

Elle doit être accompagnée des documents ci-après mentionnés et contenir, en outre, les indications suivantes :—

(1) Les nom, prénom, profession, nationalité, et domicile du propriétaire de la machine ainsi que ceux des propriétaires des terrains à arroser ou à dessécher par la même machine ;

(2) Le nom du village, du district et de la province ainsi que celui du canal ou drain sur lesquels la machine doit être établie ;

(3) Le travail auquel la machine est destinée, arrosage, ou dessèchement ;

(4) Le genre de la machine, sa force, et le diamètre du tuyau d'aspiration de la pompe ;

(5) La durée pour laquelle l'autorisation est demandée ;

(6) Une quittance constatant le versement de la somme de L.E. 1 pour frais d'instructions, à une des Caisses de l'Etat ;

(7) Un Taradi de la part des propriétaires des terrains à arroser ou à dessécher ;

(8) Un état officiel de la Moudirieh indiquant les terrains à arroser ou à dessécher ;

(9) Une carte cadastrale sur une échelle de 1/4000 au moins de la région où doit avoir lieu l'installation de la machine.

ART. 2.—L'inspection qui aura reçu la demande l'inscrira sur un registre à ce destiné et procédera ensuite à son instruction.

Si elle constate que rien ne s'oppose, au point de vue du Service des Irrigations, à l'installation de la machine, elle transmettra la demande, avec les pièces de l'instruction, au Chef du Service Mécanique pour l'instruction qu'elle comporte au point de vue de la sécurité publique.

ART. 3.—Le Chef du Service Mécanique formule, signe, et délivre, s'il y a lieu, l'autorisation qui doit contenir :—

(1) L'obligation pour le bénéficiaire de se conformer au Décret du 8 mars 1881, aux dispositions du présent Arrêté comme à toute autre disposition législative ou réglementaire ultérieure ;

(2) La description de l'emplacement exact de la machine avec croquis ;

(3) Les conditions spéciales à la machine.

L'autorisation n'étant exigée qu'en vue des nécessités des services publics, elle laisse les particuliers libres de faire valoir contre le bénéficiaire leurs droits sur les terrains où la machine sera installée et de s'opposer par les voies légales à son installation.

ART. 4.—Le Service Mécanique délivrera l'autorisation au bénéficiaire contre reçu donné sur le double transcrit sur le registre à ce destiné et contre paiement d'une taxe de P.T. 50 par H.P. sans que jamais le total de cette taxe puisse être inférieur à P.T. 500.

Le Service Mécanique communiquera ensuite, à l'inspection qui lui aura transmis la demande, copie de l'autorisation et du plan y annexé.

ART. 5.—Il est interdit de toute façon au pétitionnaire de procéder à l'installation de la machine avant d'avoir obtenu l'autorisation de même qu'il lui est interdit de la faire fonctionner avant que le Service Mécanique en ait fait l'essai et qu'il en ait délivré le permis de fonctionnement.

ART. 6.—Aucune machine élévatoire ne pourra être installée sur les prises d'eau, barrages, ponts ou autres ouvrages d'art d'intérêt public, ni aux abords de ces ouvrages, sauf à des distances déterminées par le Ministère des Travaux Publics.

ART. 7.—Le déplacement de machines prévu par l'article 6 du Décret sus-visé ne pourra être ordonné que par le Ministère des Travaux Publics. Il se fera aux frais du bénéficiaire.

ART. 8.—L'Arrêté Ministériel du 6 avril 1881 sus-visé est abrogé et remplacé par le présent Arrêté.

ART. 9.—Monsieur le Sous-Secrétaire d'Etat est chargé de l'exécution du présent Arrêté qui entrera en vigueur huit jours après sa publication aux Journaux Officiels.

Le Caire, le 8 juillet 1913.

Le Ministre des Travaux Publics,

Signé: ISMAIL SIRRY.

APPENDIX “M.”

Législation relative aux Machines à Vapeur.

DÉCRET.

Nous, Khédive d’Egypte,

Vu Notre Décret du 27 juin 1896, sur les établissements incommodes, insalubres ou dangereux ;

Sur la proposition de Notre Ministre des Travaux Publics et l’avis conforme de Notre Conseil des Ministres ;

Vu la délibération de l’Assemblée Générale de la Cour d’Appel Mixte, en date du 16 juin 1900, prise en conformité de l’article 2 du Décret du 31 janvier 1889 ;

Le Conseil Législatif entendu ;

DÉCRÉTONS :

ART. 1.—Nul ne peut installer une machine à vapeur ou chaudière, soit dans un des établissements incommodes, insalubres ou dangereux, classés dans la nomenclature jointe au Décret et Règlement Général du 27 juin 1896, soit dans un établissement non classé dans la dite nomenclature, enfin, soit isolément pour un usage quelconque, sans, au préalable, en avoir obtenu l’autorisation du Ministère des Travaux Publics.

La même autorisation sera nécessaire lorsqu’une machine à vapeur ou chaudière autorisée, sera l’objet d’un changement notable ou d’une réparation importante de nature à modifier les effets de son exploitation sous le rapport de la commodité, de la salubrité et de la sécurité publique, ou en cas de transfert de la machine à une autre personne.

Une installation autorisée pour un endroit déterminé ne pourra être déplacée que sur une nouvelle autorisation.

ART. 2.—L’autorisation du Ministère des Travaux Publics sera également nécessaire pour tout moteur à pétrole, à gaz ou à air chaud, destiné à actionner une machine quelconque.

Les dispositions de ce décret et du règlement y annexé pourront leur être appliquées, en tant que la nature de l’installation l’exigera.

Dans tous les cas où une autorisation est exigée aux termes du présent décret, elle devra être accordée ou refusée dans les soixante jours de la demande.

Le refus devra être motivé.

ART. 3.—Les machines et chaudières autorisées ou déclarées conformément au Décret du 27 juin 1896, pourront continuer à être exploitées sans nouvelle autorisation ni déclaration.

Celles installées postérieurement à la promulgation du dit décret, mais non autorisées, sont régies par les dispositions du présent décret pour les machines nouvelles.

Les propriétaires des machines ou chaudières installées avant la promulgation du Décret du 27 juin 1896, mais qui n’ont pas fait au Ministère des Travaux Publics la déclaration prescrite à l’article 5 du Règlement Général du 27 juin 1896, seront tenus de faire la dite déclaration au Ministère précité, dans un nouveau délai de soixante jours, après l’entrée en vigueur du présent décret.

Cette déclaration devra être écrite sur papier timbré de 30 mill. et contenir les indications mentionnées à l’article 1er, paragraphes (1) à (7), du règlement ci-annexé.

S’ils ne s’y sont pas conformés dans le dit délai, les machines et chaudières seront traitées comme installations nouvelles et ne pourront plus être exploitées sans autorisation préalable.

ART. 4.—Les machines et chaudières, quelle que soit la date à laquelle elles ont été établies, pourront être visitées par des délégués du Ministère des Travaux Publics, chargés

de vérifier si, au point de vue de la sécurité publique, les prescriptions du règlement ci-annexé sont observées et suivies.

Si le propriétaire de l'établissement est un étranger, l'avis préalable du jour de la visite sera donné à son consulat pour le mettre à même d'assister à la vérification s'il le croit opportun.

Ces visites ne pourront s'étendre à la partie des locaux exclusivement destinée, soit à l'usage de l'habitation, soit au service des bureaux.

Les délégués seront choisis parmi les agents supérieurs de ces administrations.

ART. 5.—En cas d'inconvénients graves pour la commodité, la salubrité ou la sécurité publique, les propriétaires des machines et chaudières, même autorisées, seront tenus de se conformer, pour le mode d'exploitation, aux précautions qui seraient prescrites par l'autorité compétente et approuvées par arrêté ministériel.

S'ils ne s'y conforment pas dans le délai prescrit, il sera procédé conformément aux dispositions de l'article 12 du règlement ci-annexé.

ART. 6.—Les machines et chaudières à vapeur destinées exclusivement à l'élévation des eaux d'arrosage ou de dessèchement, continueront à être par le Décret du 8 mars et le Règlement du 6 avril 1881, concernant les machines élévatoires.

Toutefois, le Ministère pourra, quand le besoin se fera sentir, appliquer à ces machines telles conditions de sûreté prescrites au règlement ci-annexé, qu'il jugera nécessaires.

Au cas où leurs propriétaires voudraient les adapter en même temps à un usage industriel quelconque, l'autorité compétente chargée de délivrer l'autorisation pour l'exploitation de l'industrie devra, au préalable, s'entendre avec le Ministère des Travaux Publics (Service des machines à vapeur), sur les conditions relatives à la sécurité publique qu'il y aurait lieu d'imposer dans l'acte d'autorisation.

ART. 7.—Un règlement émanant du Ministère des Travaux Publics sera annexé au présent décret pour en régler les conditions d'application.

ART. 8.—Toute contravention au présent décret et au règlement prévu par l'article 7 ci-dessus, sera punie suivant les dispositions du dit règlement.

Au cas où les copropriétaires d'une machine à vapeur incriminée seraient en partie européens et en partie indigènes, la poursuite en contravention sera intentée devant la Juridiction Mixte.

ART. 9.—Tous décrets et règlements antérieurs sur les machines à vapeur, seront abrogés en ce qu'ils ont de contraire au présent décret.

ART. 10.—Nos Ministres de l'Intérieur et des Travaux Publics sont chargés, chacun en ce qui le concerne, de l'exécution du présent décret.

Fait au palais d'Abdine, le 5 novembre 1900.

ABBAS HILMI.

Par le Khédive :

Le Président du Conseil des Ministres,
Ministre de l'Intérieur,

MOUSTAPHA FEHMY.

Le Ministre des Travaux Publics,
H. FAKHRY.

Arrêté Ministériel portant Règlement sur les Machines à Vapeur.

LE MINISTRE DES TRAVAUX PUBLICS,

Vu l'article 7 du Décret du 5 novembre 1900 sur les machines à vapeur ;

Avec l'approbation du Conseil des Ministres ;

Le Conseil Législatif entendu ;

Vu la délibération de l'Assemblée Générale de la Cour d'Appel Mixte, en date du 16 juin 1900, prise en conformité de l'article 2 du Décret du trente et un (31) janvier 1889 ;

ARRÊTE :

ART. 1.—La demande pour l'obtention de l'autorisation devra être écrite sur papier timbré de 30 mill. ; elle devra indiquer :—

(1) Les noms, prénoms, profession, nationalité et domicile du propriétaire de la machine ;

(2) Le lieu où la machine doit être installée ;

(3) L'usage auquel elle est destinée ;

(4) La force et le type de la machine ;

(5) L'âge de la chaudière, si elle a déjà servi ;

(6) Le système et les dimensions générales de la chaudière, l'épaisseur des parois et la nature des matériaux dont elle est faite ;

(7) La description des moyens d'alimentation.

La demande devra être accompagnée d'un plan de situation et de bâtiment.

Ce plan doit indiquer les voies publiques et les propriétés contiguës au lieu d'installation, les lieux construits ou à construire pour les travaux auxquels la machine est destinée, la position de la machine et de la chaudière et la position de la cheminée et sa hauteur.

“Le dessin doit être fait par un géomètre, à une échelle de 1/500. Le permissionnaire est tenu, avant de recevoir la Rokhsa, de payer une somme de P.T. 200 pour droit d'instruction.”

ART. 2.—Une fois la demande instruite et examinée par les ingénieurs du Ministère, elle sera soumise, avec le rapport de l'ingénieur y relatif, au Conseil des machines, qui statuera.

Ce Conseil sera composé de la manière suivante :—

Président :

Le chef du Service Mécanique ;

Membres :

L'inspecteur en chef des machines à vapeur ;

Un inspecteur sanitaire.

Pour toute chaudière près d'un canal, l'avis favorable de M. l'inspecteur d'irrigation intéressé devra être pris par le Service des machines, avant la délivrance de l'autorisation.

ART. 3.—La machine sera installée comme l'indique le plan, dont une copie sera délivrée au postulant, et dans les conditions suivantes :—

Pour les chaudières de plus de six chevaux de force nominale.

(a) Une chaudière de plus de six chevaux de force nominale devra être placée à 10 mètres au moins des habitations, digues et voies publiques voisines ;

(b) La cheminée de la chaudière dépassera au moins de 2 mètres les parties les plus hautes de toutes les constructions comprises dans un rayon de 50 mètres ;

(c) L'emplacement de la chaudière sera entouré d'un mur en bonne et solide maçonnerie, faite au mortier hydraulique sans mélange de terre, d'une épaisseur que le Conseil des machines déterminera en la séance même accordant l'autorisation, avec une toiture légère, séparée des toits et terrasses environnants.

Pour les chaudières de six chevaux de force nominale et au-dessous.

Ces chaudières peuvent, au besoin, être placées dans l'intérieur de tout atelier, à condition que l'atelier soit lui-même construit en bonne maçonnerie au mortier hydraulique et qu'il ne fasse pas partie d'une maison d'habitation, ni qu'il soit surmonté d'étages.

Le foyer doit être séparé des murs de l'atelier par un intervalle libre de 2 mètres au moins.

Si la chaudière est destinée à fonctionner hors d'un atelier elle devra être installée conformément aux prescriptions du paragraphe (c) du présent article.

La cheminée de la chaudière dépassera au moins de 2 mètres les parties les plus hautes de toutes les constructions comprises dans un rayon de 50 mètres.

ART. 4.—Mesures de sûreté relatives aux machines à vapeur et chaudières placées à demeure :

(a) Les chaudières ne pourront être mises en service qu'après avoir été éprouvées chez le permissionnaire, sous la direction et à la satisfaction de l'agent délégué du Ministère, et qu'après remise au permissionnaire d'un permis de fonctionnement ;

(b) L'épreuve consiste à soumettre la chaudière à une pression hydraulique supérieure à la pression effective maxima ; cette pression d'épreuve, qui ne devra produire ni déformation, ni fuite, sera maintenue pendant le temps nécessaire à l'examen de la chaudière, dont toutes les parties doivent pouvoir être visitées ;

(c) La surcharge d'épreuve par centimètre carré est égale à la pression effective, sans jamais être inférieure à un demi kilo ni supérieure à six kilos.

La chaudière ne devra être maçonnée ni couverte avant les épreuves ;

(d) L'épreuve n'est pas exigée pour l'ensemble d'une chaudière dont les diverses parties, éprouvées séparément, ne doivent être réunies que par des tuyaux placés sur leur parcours, en dehors du foyer et des conduites de flammes, et dont les joints peuvent être facilement démontés ;

(e) Le Ministère des Travaux Publics fournira les instruments nécessaires à l'opération, le permissionnaire fournissant la main-d'œuvre à ses frais ;

(f) Après qu'une chaudière ou partie de chaudière a été éprouvée avec succès, il y est apposé un timbre indiquant, en kilogrammes par centimètre carré, la pression effective que la vapeur ne doit pas dépasser ;

(g) Les timbres sont poinçonnés et reçoivent trois nombres indiquant le jour, le mois et l'année de l'épreuve ;

(h) Un de ces timbres est placé de manière à être toujours apparent après la mise en place de la chaudière.

ART. 5.—Les chaudières devront être établies et devront fonctionner conformément aux conditions générales suivantes :—

(1) Toute chaudière mise en service doit être munie d'une plaque indiquant la date de la fabrication et la pression effective maxima. Cette plaque doit être fixée à la chaudière avec des rivets en cuivre et de façon à être bien lisible ;

(2) Chaque chaudière sera munie de deux soupapes de sûreté, chargées de manière à laisser la vapeur s'écouler dès que sa pression effective atteint la limite maxima indiquée par le timbre réglementaire.

L'orifice de chacune des soupapes doit suffire à maintenir (celle-ci étant au besoin convenablement déchargée ou soulevée), quelle que soit l'activité du feu, la vapeur dans la chaudière, à un degré de pression qui n'excède, en aucun cas, la limite ci-dessus.

La section totale d'écoulement nécessaire de deux soupapes réglementaires peut être répartie entre un plus grand nombre de soupapes ;

(3) Toute chaudière sera munie d'un manomètre en bon état, placé en vue du chauffeur et gradué de manière à indiquer en kilogrammes la pression effective de la vapeur dans la chaudière.

Une marque très apparente indiquera sur l'échelle du manomètre la limite que la pression effective ne doit pas dépasser ;

(4) Chaque chaudière sera munie d'un appareil de retenue; soupape ou clapet, fonctionnant automatiquement par la pression de l'eau et placé au point d'insertion du tuyau d'alimentation qui lui est propre ;

(5) Chaque chaudière de plus de six chevaux de force nominale sera munie de deux appareils d'alimentation d'eau, capable chacun de livrer toute l'eau nécessaire à son alimentation ;

(6) Chaque chaudière sera munie d'une soupape ou d'un robinet d'arrêt de vapeur placé, autant que possible, à l'origine du tuyau de conduite de vapeur, sur la chaudière même ;

(7) Chaque chaudière sera munie de deux indicateurs de niveau d'eau, indépendants l'un de l'autre, et placés en vue de l'ouvrier chargé de l'alimentation.

L'un de ces indicateurs sera un tube verre disposé de manière à pouvoir être facilement nettoyé ou remplacé au besoin.

Si l'autre indicateur est un robinet, il sera placé à la hauteur du niveau maximum d'eau réglementaire et installé de façon à permettre l'introduction dans la chaudière d'une tringle de fer horizontale.

La position limite de l'eau sera indiquée d'une manière très apparente sur le tube de niveau et sur la face de la chaudière ou de la maçonnerie.

Pour les chaudières verticales de grande hauteur, le tube en verre sera remplacé par un appareil disposé de manière à reporter en vue de l'ouvrier chargé de l'alimentation, l'indication du niveau d'eau dans la chaudière.

ART. 6.—Les épreuves dont il est question à l'article 4 ci-dessus seront renouvelées :

(1) Toutes les fois que la chaudière sera l'objet d'une nouvelle autorisation ;

(2) Lorsqu'elle sera mise en service après un chômage de six mois au moins. L'intervalle entre deux épreuves ne doit pas dépasser six ans.

Dans les divers cas indiqués ci-dessus, une chaudière ne pourra être mise en service qu'après remise au permissionnaire d'un permis de fonctionnement constatant que les épreuves ont été satisfaisantes.

ART. 7.—Les épreuves prescrites aux articles 4 et 6 ci-dessus seront exécutées, pour la première fois, aux frais du Ministère.

Au cas où la première épreuve ne serait pas satisfaisante, elle sera renouvelée aux frais du permissionnaire.

"Ces frais seront calculés à raison de P.T. 100 pour chaque visite que l'agent délégué du Ministère fera pour le renouvellement de l'épreuve.

ART. 8.—Si, dans une année, à partir de la date de l'autorisation, le permissionnaire n'a pas demandé les épreuves prescrites à l'article 4 ci-dessus, cette autorisation se trouvera périmée.

Elle se trouvera annulée, si le bénéficiaire a fait fonctionner sa machine avant de s'être muni de permis de fonctionnement constatant que les épreuves ont été satisfaisantes et que les conditions de l'autorisation ont été suivies.

Le transfert de la machine à une autre personne que le permissionnaire entraîne également l'annulation de l'autorisation, comme il est dit au deuxième alinéa de l'article 1er du décret auquel ce règlement est annexé.

Dans ce cas, le nouveau possesseur de la machine aura, avant d'en faire usage, à se pourvoir d'une nouvelle autorisation. Faute de quoi, il sera considéré et traité comme ayant une machine sans autorisation, et les pénalités y relatives, édictées par l'article 13 ci-après, lui seront appliquées.

MACHINES ET CHAUDIÈRES LOCOMOBILES.

ART. 9.—Sont considérées comme locomobiles les machines et chaudières à vapeur qui ne sont employées que d'une manière temporaire, à chaque station, qui peuvent être trans-

portées facilement d'un lieu à un autre et qui n'exigent aucune construction pour fonctionner sur un point donné.

Les dispositions concernant les mesures de sûreté sont applicables aux chaudières locomobiles.

Chaque chaudière doit porter une plaque sur laquelle sont gravés en caractères très apparents le nom, le domicile du propriétaire et un numéro d'ordre, si ce propriétaire possède plusieurs chaudières locomobiles.

DISPOSITIONS GÉNÉRALES.

ART. 10.—L'autorisation est délivrée au permissionnaire à ses risques et périls, sans que le Gouvernement puisse encourir aucune responsabilité vis-à-vis de l'intéressé, des voisins ou de qui que ce soit, pour l'usage qui en sera fait.

L'autorisation délivrée par ce Ministère ne concerne pas l'industrie à laquelle doit être employée la machine à vapeur, le permissionnaire devant se munir, s'il y a lieu, suivant les règlements sur les établissements industriels, et auprès des autorités compétentes, des autorisations nécessaires pour l'exercice de cette industrie.

ART. 11.—Si, à la suite de la visite prévue à l'article 4 du décret auquel le présent règlement est annexé, on a constaté des irrégularités dans le fonctionnement de la machine ou de la chaudière, présentant un danger pour la sécurité publique, ou bien que l'une quelconque des conditions de l'autorisation ou du permis de fonctionnement n'a pas été observée, il sera immédiatement notifié au propriétaire de la machine un avis administratif lui indiquant la cause constituant le danger, ou la condition de l'autorisation ou du permis de fonctionnement violée ou inobservée, et lui enjoignant d'y remédier dans un délai qui ne devra pas être moindre de vingt jours.

Ce délai courra à partir de la date de la notification de l'avis administratif.

Au cas où, après l'expiration du délai fixé, l'avis administratif n'aura pas été exécuté, procès-verbal de contravention sera dressé contre le propriétaire même de la machine, auquel il incombera de régulariser sa position vis-à-vis des locataires ou autres occupants.

"Pour toute visite faite en vue de s'assurer de l'exécution de l'avis administratif visé au premier alinéa du présent article, le propriétaire de la machine devra payer un droit de P.T. 100."

En cas de danger imminent, et sur arrêté ministériel dûment motivé, le fonctionnement de la machine sera immédiatement suspendu par l'autorité administrative locale, en attendant le jugement à intervenir sur la contravention constatée.

ART. 12.—Les arrêtés visés à l'article 5 du décret, devront être motivés et indiquer un délai pour leur exécution, délai qui ne pourra être inférieur à vingt jours, à partir de la date de la notification par voie administrative.

Au cas où, après l'expiration du délai fixé, l'arrêté n'aura pas été exécuté, il sera procédé conformément aux dispositions de l'article précédent.

ART. 13.—Le propriétaire qui a fait fonctionner une machine ou chaudière à une pression supérieure au degré déterminé dans l'acte d'autorisation, ou qui a surchargé les soupapes de sûreté d'une chaudière, qui a faussé ou paralysé les autres appareils de sûreté, tels que manomètre, indicateur de niveau de chaudière, sera puni d'une amende de 100 P.T.

En cas de récidive dans l'année, le juge, en appliquant l'amende, pourra ordonner l'arrêt de la machine.

ART. 14.—Toute autre contravention aux dispositions du décret et du présent règlement sera punie d'une amende de 10 à 100 P.T.

Le juge devra ordonner l'arrêt de la machine toutes les fois qu'il y aura défaut d'autorisation, de permis ou de déclaration, et il pourra l'ordonner dans tous les autres cas, suivant les circonstances.

Le Caire, le 6 novembre 1900.

H. FAKHRY.

APPENDIX "N."

Decrees and Ministerial Orders relating to Watching and Protection
of the Nile Banks during the Nile Flood.

DECREE dated January 25, 1881, concerning the Procedure to be followed
in connection with the Irrigation Works, Clearances, *Corvée*, etc.

WE KHEDIVE OF EGYPT,

Having regard to the report of Our Minister of Public Works dated Safar 23, 1298 ;

On the proposition of Our Ministers of the Interior and of Public Works, and with
the approbation of Our Council of Ministers,

HEREBY DECREE AS FOLLOWS :—

ART. 1.—The public works herebelow enumerated are and shall remain at the Govern-
ment charge, *viz.* :—

- (a) The masonry works benefitting one or many provinces, constructed, or to be constructed, on the Nile and its branches, on its banks, on the main canals, on the banks of Upper Egypt basins, and other banks of public utility ;
- (b) The dredging works, including all expenses for the purchase, the working and the maintenance of the plant ;
- (c) The supply and transport of materials, such as stone, timber, *shenf*, etc., required for public utility, either, for the preservation of the banks and masonry works, or for the closure of regulator and canal heads.

ART. 2.—The quantity and cost of the works and supplies laid to Government charge, shall be fixed every year in accordance with the rules and orders existing, or to be issued to this effect ; the amount will be set down in the budget of the Public Works Ministry. However, as regards the works of El Ibrahîmiya Canal, the landowners concerned shall, until the cadastral works are completed, be bound to refund to the Treasury the amount of the expenditure.

ART. 3.—The cost of the masonry works made or to be made on the canals or banks serving villages in one or several districts, one village, or a private property, shall be borne by the landowners benefitting therefrom.

ART. 4.—The following works shall be carried out by the population in general, *viz.* :—

- (a) The earthwork, excavation and refilling, and the clearances by hand, either interesting one or many provinces, or the villages of one or several districts, or one village, or one private property ;
- (b) The watching of the banks and masonry works during the Nile flood ;
- (c) The handling, placing, and collection of materials destined to the maintenance of banks and masonry work and to the closures of earthen dams.

The public works commissions shall classify these works into works of general interest, of common interest (*Mushtarak*), and of private interest, and distribute them among the inhabitants of the provinces and districts.

Only works of general and common interest form the object of the *corvée*.

ART. 5.—The *corvée* is obligatory upon the inhabitants of the country, of male sex, valid, and of from fifteen to fifty years old, with the exception of those exempted under the following rules.

ART. 6.—The following are exempted from the *corvée* :—

(1) 'Ulamas, *fiqis*, teachers, students of mosques and schools, persons attached to benevolent establishments, viz., *Tekiyas*, convents and hospitals ;

(2) Persons serving in mosques or cemeteries, and marabouts, in possession of regular certificates ;

(3) Priests, monks, rabbins, persons serving in churches, temples, cemeteries of the various religions, also in possession of regular certificates ;

(4) Men exercising a craft or profession paying a professional tax, fishermen and boatmen ;

(5) *Ghajirs* of villages, hamlets, etc., recognized by the *Mûdir* ;

(6) Inhabitants of the principal towns who are neither landowners nor employed in the agriculture ;

(7) Persons with incurable diseases.

ART. 7.—Any individual liable to *corvée* may liberate himself on supplying a substitute.

The following may liberate themselves on paying the ransom in money :—

(a) The inhabitants of the *Ezbas*, dependent on any of the neighbouring villages, and who are not included in the census of these villages ;

(b) The Bedouins—whether landowners or cultivators—hitherto exempted from *corvée* ;

(c) The inhabitants of the villages engaged on the lands of the State Domains and the *Daira Sanieh*, in Lower Egypt, in the villages where these administrations possess more than one hundred feddâns, provided that the lands are not let on lease and on condition that the number of men paying the ransom, for each village, be limited to the needs of the crops.

For the villages where the rice crops is predominant and which have been, for this reason, the object of a special measure in regard to the dates when land-tax falls due, the *corvée* remains compulsory ; but, in the yearly distribution of the cubes to be executed by the inhabitants of the provinces, only half of the cubes imposed upon the inhabitants of other villages, shall be imposed upon those villages.

ART. 8.—The rate of the ransom, if admitted, is fixed for the year 1881 at one hundred and twenty piastres per person (P.T. 120) in the *Mudîriyas* of Lower Egypt, and to eighty piastres (P.T. 80) in those of Upper Egypt.

From the year 1882 onwards, the rate of the ransom shall be fixed every year, and notified to the *Mudîriyas* by the Minister of Public Works one month before the beginning of the work ; it will be established according to the nature and the quantity of works to be done, and to the time during which they must be executed.

ART. 9.—The Minister of Public Works can suspend, in the villages where he deems it necessary in the general interest of the works, the option of the ransom referred to in Article 7 ; he may also, in the case where it will be possible to substitute mechanical work and work by contract for *corvée*, generally authorize the payment of the ransom in one or several *Mudîriyas*.

ART. 10.—The sums collected in each *Mudîriya*, on account of *corvée* ransom, shall be entered in a special register and deposited into the Treasury of the *Mudîriya* at the disposal of the Ministry of Public Works.

These sums shall not be expended except on works having for object the reduction or the suppression of *corvée*.

ART. 11.—The Ministry of the Interior shall take the necessary steps in view of calling up *corvée* men, and insuring their presence on the works.

ART. 12. —Our Ministers of the Interior and of Public Works are charged, each as far as he is concerned, with the execution of this Our Decree.

Given at Abdin Palace, Safar 25, 1298 (January 25, 1881.)

MEHEMET TEWFIK.

By the Khedive :

RIAZ,

*President of the Council of Ministers,
Minister of the Interior.*

ALY MOUBAREK,

Minister of Public Works.

(Translation.)

**DECREE dated September 9, 1887, calling the Assistance of any Man
fit for Work for the Works of Protection against Inundation.**

WE, KHEDIVE OF EGYPT,

On the proposition of Our Ministers of the Interior and the Public Works, and with
the approbation of Our Council of Ministers ;

Having heard the Legislative Council,

HEREBY DECREE AS FOLLOWS :

ART. 1.—When the level of the Nile flood reaches twenty-four pics at Cairo Nilo-meter, the *Mudîrs* and Governors may call for assistance any man fit for work in order to cooperate in carrying out the works for protection against inundation in the locality presenting a danger on condition that the men should be called from the localities nearest to the place threatened.

ART. 2.—If the Nile does not reach the above level and a *Mudîr* or Governor finds that it presents an imminent danger to one of the localities of the *Mudîriya* or the governorate he may at once take action in accordance with the preceding article, and then apply for approval of the Minister of Public Works within twenty-four hours after calling up the men, but his action shall continue to be operative until orders have been given to the contrary.

ART. 3.—Any one refusing co-operation in accordance with the provisions laid down in the two preceeding articles, shall be punished by an imprisonment of twenty days to three months or by a fine of one hundred to one thousand piastres.

The same penalty shall be inflicted upon anyone who would prevent others from lending assistance.

ART. 4.—The penalties prescribed in the preceeding article shall be inflicted by a Commission presided over by the *Mudîr* or his deputy and composed of two *Omdas*, of the *Mamour* of the Markaz or the *Nâzir-qism* and the Chief Engineer of the *Mudîriya* or his delegate.

In the Governorates, the Commission shall be presided over by the governor or his deputy and shall be composed of two notables of the town and of the Engineer of the *Tanzîm* or his delegate.

ART. 5.—Persons condemned to imprisonment may appeal against the decision of the Commission mentioned in the preceeding articles, before a Committee which shall be instituted by Our Minister of the Interior, under his presidency or that of the Under-Secretary of State of the Ministry.

The appeal must be made within five days from the date of the decision rendered by the governorates and *Mudîriyas* of Lower Egypt as well as those of Upper Egypt up to Asyut, and within ten days from the date of the decisions given by the *Mudîriyas* situated south of Asyut.

The *Mudîrs* and governors are entrusted with the execution of the final decisions given by the Commissions of the *Mudîriyas* and governorates or by the Committee of the Ministry of Interior.

ART. 6.—Our Ministers of the Interior and of Public Works are charged, each as far as he is concerned, with the execution of this Our Decree.

Given at Râs el Tin Palace, Zul Hodjeh 21, 1304 (September 9, 1887).

MEHEMET TEWFIK.

By the Khedive :

MOUSTAPHA FAHMY,

*President of the Council of Ministers,
Minister of the Interior.*

ABDEL RAHMAN ROUCHDY,
Minister of Public works.

(Translation.)

**DECREE dated June 29, 1899, concerning the Watching and Protection
of Banks during the Nile Flood.**

WE, KHEDIVE OF EGYPT,

Having regard to the Decree of Shawâl 25, 1302 (August 6, 1885), and to our Decrees dated Moharrem 8, 1313 (July 1, 1895), and Sha'bân 24, 1313 (February 8, 1896), respectively, concerning the watching and protection of banks during the Nile flood;

Considering the amendments introduced into the said Decree;

Considering that it has been deemed necessary to introduce further amendments into Articles 6, 7, 8, and 9 of the Decree dated Shawâl 25, 1302 (August 6, 1885), and that therefore it would be desirable to replace the said Decree and to embody into one Decree their provisions as well as the amendments to be therein introduced;

On the proposition of our Ministers of the Interior and of Public Works, and with the approbation of Our Council of Ministers;

Having heard the Legislative Council;

HEREBY DECREE AS FOLLOWS:—

ART. 1.—The inhabitants of the country are bound to watch and protect the banks and bridges during the period of the Nile flood, in accordance with the terms of the Decree of Safar 24, 1298 (January 25, 1881).

ART. 2.—On June 15 every year the Ministry of Public Works will point out to the *Mudîriyas* the places which ought to be protected and watched, and the number of men to be supplied by each *Mudîriya*.

ART. 3.—On July 1 of every year an Assembly shall meet in each *Mudîriya* under the presidency of the *Mudîr* or his representative; it shall be composed of the chief engineer of the province, the *Mamûrs* of districts, and four *Omdas* from each district.

These *Omdas* shall be chosen by all the *Omdas* of the district at a meeting to be held under the presidency of the *Mamûr*, before the convocation of the Assembly, at the seat of the *Mudîriya*.

The *Mudîr* or his representative will communicate to the Assembly the instructions which he may have received from the Ministry of Public Works concerning the number of men to be furnished for the watching. The Assembly shall then fix the number of men to be furnished by each district and each village according to the Census Registers kept at the *Mudîriya*.

ART. 4.—Before July 15 every *Omda* is bound to supply the *Mudîriya* with a roll of all men liable to *corvée* in his village.

The roll must give the duration of each Sheikh's service.

ART. 5.—The number of men considered necessary by the Ministry of Public Works should be called out to be at the appointed places on August 1, or at any other subsequent date to be fixed by the said Ministry, according to the state of the flood.

These men should not be kept on for more than fifteen consecutive days, and ought not to be called out again except after all those whose names figure on the roll have been called out, each in his turn.

ART. 6.—If one of the men figuring on the roll forwarded to the *Mudîriya* by the *Omda* fails, when called out by his Sheikh, to be on the spot where he is to perform the duties of *ghafir*, or commits an offence in the exercise of his duties of *ghafir*, he shall be tried and sentenced, by a Commission, to one of the penalties set forth below; such Commission to be instituted in each district and to be composed of the *Mamûr* of the district or, in his absence, his representative as president, and of the four *Omdas* chosen, in accordance with Article 3, by the *Omdas* of the district to attend the Assembly for protection against the Nile to be held at the seat of the *Mudîriya*.

These penalties are :—

- (1) A fine of from P.T. 25 to P.T. 100 ;
- (2) A fine of from P.T. 100 to P.T. 1,000, or imprisonment for a period of from five days to three months.

The meeting of the Commission shall not be valid unless two 'Omdas, at least, are present with the *Mamûr* of the district or his representative.

While away from the seat of the district inspecting the banks, the *Mamûr* may form on the spot and under his presidency, a Commission composed of four 'Omdas chosen by himself from the neighbouring villages, in order to try offences and delays detected during his inspection.

The Sheikh of the village is bound immediately to supply a substitute from the man sentenced.

ART. 7.—Any 'Omda or Sheikh who fails to supply, in whole or in part, the number of men required, or to be on the spot committed to his charge, or who leaves it without permission, or neglects to keep watch incumbent upon him, shall be tried by the Administrative Commission referred to in Article 2 of the 'Omdas and Sheikhs Regulations and shall be liable to the disciplinary penalties mentioned in Article 9 and 10 of the same Regulations ; the fine may be increased to P.T. 2,000.

ART. 8.—The *Mamûr* of the district entrusted with the supervision of the *ghafîrs*' beats must immediately take the necessary steps to replace the offender on his beat by another sheikh.

ART. 9.—A Commission shall be formed at the seat of the *Mudîriya* under the presidency of the *Mudir* or of his representative, in his absence ; it shall be composed of four 'Omdas chosen by the Assembly referred to in Article 3, to hear cases against which appeal is made.

The *Mamûr* of the district may ask the Commission of Appeal to reconsider any judgment rendered by the Commission of First Instance. The offender has no right to appeal except in the case referred to in paragraph 2 of Article 6.

If any one of the members of the Commission of First Instance who have rendered the judgment against which appeal is made happens to be also a member of the Commission of Appeal when the said judgment is being reconsidered, he may not attend unless the three other 'Omdas are present.

The meeting of the Commission of Appeal shall not be valid unless at least two 'Omdas are present, neither of them having participated in the judgment against which appeal is made.

ART. 10.—Special regulations will be drawn up by the Ministry of the Interior establishing the mode of writing *procès-verbaux* as well as the procedure to be followed ; these regulations will determine the limit of time for appeal and the mode of serving and executing judgments.

ART. 11.—The recovery of the amount of a fine shall be made in the manner laid down in the Decree of March 25, 1880, without prejudice to the right to imprison.

ART. 12.—The Decree of Zul Hodjeh 21, 1304 (September 9, 1887), is, and shall remain, in force.

ART. 13.—The Decree of August 6, 1885, July 1, 1895, and February 8, 1896, are repealed and replaced by this Our Decree.

ART. 14.—The Ministers of the Interior and of Public Works are charged, each as far as he is concerned, with the execution of this Our Decree.

Given at Râs el Tin Palace, Safar 21, 1317 (June 29, 1899).

By the Khedive :

ABBAS HILMI.

MOUSTAPHA FAHMY,

*President of the Council of Ministers,
Minister of the Interior.*

HUSSEIN FAKHRY,

Minister of Public Works.

(Translation.)

REGULATIONS, dated Gamâd el Tâni 24, 1317 (October 29, 1899), concerning the Procedure to be followed in Matters connected with the Watching and Protection of Banks during the Nile Flood:—

THE MINISTER OF THE INTERIOR,

In view of Article 10 of the Decree dated Safar 21, 1317 (June 29, 1899), relative to the watching and protection of the Nile banks during the Nile flood ;

ORDERS AS FOLLOWS :

ART. 1.—Any offence committed against the provisions of the Decree above referred to, as well as the Decree of September 9, 1887, and generally against the Regulations bearing on the subject shall form the subject of a *procès-verbal* drawn up by the district engineer or by a *Mo'âwen* appointed by the chief engineer, and countersigned by the 'Omda, or by one of the sheikhs of the village within which the offence has been committed.

In the absence of the 'Omda or the sheikhs, the *procès-verbal* shall be signed by the *Mamûr* of the district or by one of the *Mo'âwens* of the *Mudîriya* or of the districts, or by a police agent, provided they have seen the offence.

In the event of the above officials and agent being absent the *procès-verbal* shall be signed by the Inspector of the Irrigation or by an engineer or director of works or surveyor of contracts delegated by him.

The *Mudîr* must be immediately informed of the name of the delegate and of the object of the mission entrusted to him

ART. 2. —The *procès-verbal* must be dated and shall contain :—

- (1) The name, surname, calling, and residence of the accused ;
- (2) A statement showing the facts constituting the offence, the day and place where it has been committed, as well as all the circumstances proving the committal of the offence.

It shall be immediately sent to the District Office.

ART. 3.—Twenty-four hours after the reception of the *procès-verbal* the accused shall be asked, by a simple notice to appear before the Commission.

This notice shall be made out in duplicate and shall contain :—

- (1) The name, surname, calling, and residence of the accused ;
- (2) The subject of the offence ;
- (3) A statement of the article according to which the accused should be tried ;
- (4) The day and hour on which the accused is to appear should be fixed as soon as possible after the committal of the offence, but at least two days' clear notice shall be given.

ART. 4.—The agent appointed to serve upon the accused the notice to appear must state the day and the hour of delivery at the bottom of the two copies thereof and sign them both.

In case of absence of the accused or of refusal on his part to take delivery of the notice the fact should be stated in the notice and the copy destined for the accused should be handed over to the 'Omda or, in his absence, to his representative, who should acknowledge receipt of same on the original copy.

ART. 5.—The accused must appear personally before the Commission on the hour and day fixed.

His appearance will nullify any irregularity in the notification.

ART. 6.—If the accused does not present himself, the Commission should ascertain whether the formalities prescribed by Articles 3 and 4 have been observed.

If it is found that there has been no irregularity in the matter of the notice, the Commission shall try the case by default, and from the decision given there shall be no appeal.

If any irregularity is found, the commission may see that a second notice be served upon the accused fixing the next sitting.

ART. 7.—If the *Mamûr* of the district, during his inspections on the banks, sees an offence and finds it necessary to call together on the spot a Commission for the trial of the offenders, a notice shall be served upon the accused to appear at once before the Commission, in accordance with Article 6 of the Decree.

ART. 8.—At the sitting fixed, the *procès-verbal* shall be read out by the clerk; it shall hold good unless negatived.

The accused, if present, will defend himself, and his witnesses, if present, will be heard.

The clerk should summarize, in the "Minutes of Proceedings," the statements of the defendant, as well as of the witnesses.

The Commission will forthwith render its decision, stating the grounds upon which it is based.

The Commission may order further investigations, if necessary, and fix a sitting for its final decision.

ART. 9.—If the offender's appeal against the decision of the Commission is admitted in accordance with Article 9 of the Decree, namely in the case referred to in paragraph 2 of Article 6, it should be presented, accompanied by a report, to the Markaz within three days following the rendering of the decision, if the offender was present at the trial; if absent, from the day on which the decision was notified to him.

No appeal will be accepted when this delay has elapsed.

The demand for appeal shall be immediately forwarded to the Mudîriya.

The *Mamûr's* appeal may be presented within the eight days following the rendering of the decision by a demand written at the bottom of the latter.

The acceptance of the appeal will be notified to the party concerned, with a request that he will present his defence within the eight days direct to the Commission of Appeal.

ART. 10.—The *Mudîr* will forward to the Commission of Appeal all cases of appeal and will fix the day of the sitting as soon as possible.

The Commission of Appeal will render its decision, after perusal of the papers, and no fresh notification need be sent to the offender who may, however, present to the Commission his defence in writting. The Commission may order any investigations it may deem necessary.

No "Minutes of Proceedings" will be written for the sitting of the Commission of Appeal.

ART. 11.—The decisions once rendered, either in the first instance or by the Commission of Appeal, shall be served administratively, at the request of the *Mamûr* of the district, to whom the *Mudîr* shall forward the decisions of the Commission of Appeal.

The *Mamûr* of the district shall carry out the decisions when final.

The fines inflicted shall be recovered in the manner prescribed by the Decree of March 25, 1880, concerning land-tax recovery.

ART. 12.—Offences committed by the Sheikhs and 'Omdas falling within the competence of the Sheikhs' Commission, as per Article 7 of the Decree, shall be enquired into and tried in accordance with the rules in force, in conformity with the Decree of March 16, 1895, concerning 'Omdas and Sheikhs.

ART. 13.—The present Regulations will come into force ten days after their publication in the *Journal Officiel*.

Cairo, October 29, 1899.

MOUSTAPHA FAHMY.

(Translation.)

ARRÊTÉ issued by the Ministry of the Interior, and published in the Journal Officiel on March 16, 1916, No. 24, modifying the Procedure to be followed in the Trial of Offences re Watching Nile Banks.

THE MINISTER OF THE INTERIOR,

In view of Article 6 of the Decree of June 29, 1899, relative to the watching of Nile banks during the flood;

In view of the Ministry of the Interior's *Arrêté*, dated October 29, 1899, concerning the procedure to be followed in connection with the offences committed against the Regulations *re* watching of banks.

ORDERS AS FOLLOWS:

ART. 1.—The procedure set down in the present *Arrêté* should be followed, in regard to offences and delays noticed by the *Mamûr* during his inspections on the banks while away from the seat of the district and for the trial of which he finds it necessary to form a Commission on the spot, in accordance with the last paragraph but one of Article 6 of the above Decree.

ART. 2.—When the *Mamûr* is accompanied by an official from the Irrigation Service authorized, in virtue of Article 1 of the above *Arrêté* of October 29, 1899, to draw up *procès-verbaux*, the *procès-verbal* shall be drawn up by both the *Mamûr* and the official accompanying him.

When the *Mamûr* is not accompanied by an official from the Irrigation Service, the *procès-verbal* shall be drawn up by the *Mamûr* alone. It must contain the particulars mentioned in Article 2 of the above *Arrêté*.

ART. 3.—The *Mamûr* will immediately prepare, in one copy, a notice summoning the accused to appear, containing the particulars mentioned in Article 3 of the above *Arrêté*, and which should be served in the following manner:—

- (a) If the accused is present on the bank, he will be informed through one of the sheikhs of villages, or any administrative agent chosen by the *Mamûr* and happening to be on the spot;
- (b) If the accused is not on the bank, he will be notified at his residence by the village 'Omda, or his representative.

In both cases the notice should be communicated verbally. The person appointed for the purpose will write down on the notice itself the fact that the communication has been made to the proper man, in accordance with Article 4 of the above mentioned *Arrêté*.

If the accused is present he must affix his signature, his seal, or his thumb-print on the notice itself; if he refuses, the fact should be noted.

ART. 4.—The present *Arrêté* will come into force from the date of its publication in the *Journal Officiel*.

Cairo, March 11, 1916 (Gamâd el Awal 7, 1334).

HUSSEIN RUSHDY.

(Translation.)

MINISTERIAL ORDER instituting an Appeal Committee for the Sentences passed in accordance with the Decree of September 9, 1887, relating to Nile Banks.

THE MINISTER OF THE INTERIOR,

Having regard to Article 5 of the Decree dated September 9, 1887 (Zul Hodjeh 21, 1304), laying down the adoption of measures of defence against Nile flood,

HEREBY ORDERS AS FOLLOWS:

ART. 1.—The Appeal Committee designated in Article 5 of the Decree referred to shall be composed as follows:—

President.

Under-Secretary of State, Ministry of the Interior.

Members.

A delegate of the State Legal Department for the Interior;

A delegate of the State Legal Department for the Public Works Ministry.

ART. 2.—Effect shall be given to this Order from the date of its publication in the *Journal Officiel*.

September 14, 1918 (Zul Hodjeh, 8, 1336).

HUSSEIN RUSHDY.

(*Translation.*)

APPENDIX "O."

HIGHER POSTS AND THEIR HOLDERS.

1884.

Minister of Public Works	Aly Pasha Mubarek. Abdel Rahman Pasha Rushdy.
U.S. of S. Public Works	Rousseau Pasha. Col. Scott Moncrieff.
I.G.I.	Col. Scott Moncrieff.

1885.

Minister of Public Works	Abdel Rahman Pasha Rushdy.
U.S. of S. Public Works	Col. Scott Moncrieff.
I.G.I.	Major Ross.

1886.

Minister of Public Works	Abdel Rahman Pasha Rushdy.
U.S. of S. Public Works	Col. Scott Moncrieff.
I.G.I.	Major Ross.

1887.

Minister of Public Works	Abdel Rahman Pasha Rushdy.
U.S. of S. Public Works	Col. Scott Moncrieff.
I.G.I.	Major Ross.

1888.

Minister of Public Works	Abdel Rahman Pasha Rushdy. Mohamad Pasha Zaki.
U.S. of S. Public Works	Sir Colin Scott Moncrieff.
I.G.I.	Lieut.-Col. Ross.

1889.

Minister of Public Works	Mohamad Pasha Zaki.
U.S. of S. Public Works	Sir Colin Scott Moncrieff.
I.G.I.	Lieut.-Col. Ross.

1890.

Minister of Public Works	Mohamad Pasha Zaki.
U.S. of S. Public Works	Sir Colin Scott Moncrieff.
I.G.I.	Lieut.-Col. Ross.

1891.

Minister of Public Works	Mohamad Pasha Zaki.
U.S. of S. Public Works	Sir Colin Scott Moncrieff.
I.G.I.	Lieut.-Col. Ross.

1892.

Minister of Public Works	Mohamad Pasha Zaki.
U.S. of S. Public Works	Sir Colin Scott Moncrieff (retired). W. E. Garstin.
I.G.I. Upper Egypt	Col. Ross (retired). Major Brown.
I.G.I. Lower Egypt	Col. Ross (retired). E. W. P. Foster.
D.G. Reservoirs	W. Willcocks.

Note.—The single I.G.I. post was duplicated on the retirement of Col. Ross.

1893.

Minister of Public Works	Mohamad Pasha Zaki.
U.S. of S. Public Works	W. E. Garstin.
I.G.I. Upper Egypt	Major Brown.
I.G.I. Lower Egypt	E. W. P. Foster.
D.G. Reservoirs	W. Willcocks.

1894.

Minister of Public Works	Mohamad Pasha Zaki. Hussein Pasha Fakhry.
U.S. of S. Public Works	W. E. Garstin.
I.G.I. Upper Egypt	Major Brown.
I.G.I. Lower Egypt	E. W. P. Foster.
D.G. Reservoirs	W. Willcocks.

1895.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	W. E. Garstin.
I.G.I. Upper Egypt	Major Brown (transferred). W. J. Wilson.
I.G.I. Lower Egypt	E. W. P. Foster (retired). Major Brown.
D.G. Reservoirs	W. Willcocks.

1896.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	W. J. Wilson.
I.G.I. Lower Egypt	Major Brown.
D.G. Reservoirs	W. Willcocks.

1897.

Minister of Public Works	Hussein Pasha Fakhry
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	W. J. Wilson.
I.G.I. Lower Egypt	Major Brown.
D.G. Reservoirs	W. Willcocks (retired).

1898.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	A. L. Webb.
I.G.I. Lower Egypt	Major Brown.
D.G. Reservoirs	W. J. Wilson.

1899.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	A. L. Webb.
I.G.I. Lower Egypt	Major Brown.
D.G. Reservoirs	W. J. Wilson.

1900.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	A. L. Webb (transferred). K. Verschöyle.
I.G.I. Lower Egypt	Major Brown.
D.G. Reservoirs	W. J. Wilson (died). A. L. Webb.

1901.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	K. Verschoyle.
I.G.I. Lower Egypt	Major Brown.
D.G. Reservoirs	A. L. Webb.

1902.

Minister of Public Works	Hussein Pasha Fakhry..
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	K. Verschoyle.
I.G.I. Lower Egypt	Sir Hanbury Brown.
D.G. Reservoirs	A. L. Webb.

1903.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	K. Verschoyle (transferred). A. L. Webb.
I.G.I. Lower Egypt	Sir Hanbury Brown (retired). K. Verschoyle.

Note.—The post of D.G. Reservoirs was suppressed at the beginning of the year and functions transferred to I.G.I. Upper Egypt.

1904.

Minister of Public Works	Hussein Pasha Fakhry.
U.S. of S. Public Works	Sir William Garstin.
I.G.I. Upper Egypt	A. L. Webb.
I.G.I. Lower Egypt	K. Verschoyle.

Note.—Sir William Garstin was appointed Adviser in October 1904.

1905.

Minister of Public Works	Hussein Pasha Fakhry.
Adviser	Sir William Garstin.
U.S.S. Egyptian Irrigation	A. L. Webb.
I.G.I. Upper Egypt	T. H. Clowes.
I.G.I. Lower Egypt	K. Verschoyle.
I.G. Sudan	C. E. Dupuis.

Note.—From the beginning of the year the U.S. post was duplicated. A. L. Webb became U.S. of S. Egyptian Irrigation and A. H. Perry U.S. of Towns and State Buildings.

1906.

Minister of Public Works	Hussein Pasha Fakhry.
Adviser	Sir William Garstin.
U.S.S. Egyptian Irrigation	A. L. Webb.
I.G.I. Upper Egypt	T. H. Clowes (retired). J. Langley.
I.G.I. Lower Egypt	K. Verschoyle.
I.G. Sudan	C. E. Dupuis.

1907.

Minister of Public Works	Hussein Pasha Fakhry.
Adviser	Sir William Garstin.
U.S.S. Egyptian Irrigation	A. L. Webb.
I.G.I. Upper Egypt	J. Langley.
I.G.I. Lower Egypt	K. Verschoyle (died). W. R. Williams.
I.G.B.C.W.	Ismail Pasha Sirry.
I.G. Sudan	C. E. Dupuis.
D.G. Reservoirs	M. MacDonald.

1908.

Minister of Public Works	Hussein Pasha Fakhry.
	Ismail Pasha Sirry.
Adviser	Sir William Garstin (retired).
	A. L. Webb.
U.S. of S. Egyptian Irrigation... ..	A. L. Webb.
I.G.I. Upper Egypt	J. Langley.
I.G.I. Lower Egypt	W. R. Williams.
I.G.B.C.W.	Ismail Pasha Sirry.
	G. B. Ireland.
I.G. Sudan	C. E. Dupuis.
D.G. Reservoirs	M. MacDonald.

Note.—On the retirement of Sir William Garstin, the functions of Adviser and Under-Secretary of State Egyptian Irrigation were combined by A. L. Webb.

1909.

Minister of Public Works	Ismail Pasha Sirry.
Adviser-U.S.S. Egyptian Irrigation ...	A. L. Webb (retired).
	C. E. Dupuis.
I.G.I. Upper Egypt	J. Langley.
I.G.I. Lower Egypt	W. R. Williams.
I.G.B.C.W.	G. B. Ireland.
I.G. Sudan	C. E. Dupuis (promoted).
	P. M. Tottenham.
D.G. Reservoirs	M. MacDonald.

1910.

Minister of Public Works	Ismail Pasha Sirry.
Adviser-U.S.S. Egyptian Irrigation... ..	C. E. Dupuis.
I.G.I. Upper Egypt	J. Langley.
I.G.I. Lower Egypt	W. R. Williams.
I.G.B.C.W.	G. B. Ireland.
I.G. Sudan	P. M. Tottenham.
D.G. Construction	M. MacDonald.

1911.

Minister of Public Works	Ismail Pasha Sirry.
Adviser	C. E. Dupuis.
U.S. of S. Public Works	C. E. Dupuis.
	M. MacDonald.
I.G.I. Upper Egypt	J. Langley.
I.G.I. Lower Egypt	W. R. Williams.
I.G.B.C.W.	G. B. Ireland.
I.G. Sudan	P. M. Tottenham.
D.G. Construction	M. MacDonald (promoted).
	Post suppressed.

Note.—On the retirement of A. H. Perry, the post of Under-Secretary of State Towns and Buildings was suppressed, the Under-Secretary of State Egyptian Irrigation became Under-Secretary of State Public Works and the posts of Adviser and Under-Secretary of State were occupied by separate holders.

1912.

Minister of Public Works	Sir Ismail Pasha Sirry.
Adviser	C. E. Dupuis (resigned). Post suppressed.
U.S. of S. Public Works	M. MacDonald.
I.G.I. Upper Egypt	J. Langley.
I.G.I. Lower Egypt	W. R. Williams.
I.G.B.C.W.	G. B. Ireland.
I.G. Sudan	P. M. Tottenham.

1913.

Minister of Public Works	Sir Ismail Pasha Sirry.
U.S. of S. Public Works	Sir Murdoch MacDonald.
I.G.I. Upper Egypt	J. Langley (transferred).
	G. B. Ireland.
I.G.I. Lower Egypt	W. R. Williams.
I.G.B.C.W.	G. B. Ireland (transferred).
	H. W. Molesworth.
I.G. Sudan	P. M. Tottenham.

1914-1915.

Minister of Public Works	Sir Ismail Pasha Sirry.
U.S. of S. Public Works	Sir Murdoch MacDonald.
I.G. Headquarters	W. R. Williams.
I.G.I. Upper Egypt	G. B. Ireland.
I.G.I. Lower Egypt	P. M. Tottenham.
I.G.B.C.W.	H. W. Molesworth.
I.G. Sudan	P. M. Tottenham (transferred).
	Post suppressed.

1915-1916.

Minister of Public Works	Sir Ismail Pasha Sirry.
U.S. of S. Public Works	Sir Murdoch MacDonald.
I.G. Headquarters	W. R. Williams (resigned).
I.G.I. Upper Egypt	G. B. Ireland.
I.G.I. Lower Egypt	P. M. Tottenham.
I.G.B.C.W.	H. W. Molesworth.

1916-1917.

Minister of Public Works	Sir Ismail Pasha Sirry.
U.S. of S. Public Works	Sir Murdoch MacDonald.
I.G. Headquarters	P. M. Tottenham.
I.G.I. Upper Egypt	G. B. Ireland.
I.G.I. Lower Egypt	A. M. Adamson.
I.G.B.C.W.	H. W. Molesworth.

Note.—Sir Murdoch MacDonald was appointed Adviser in February 1917. Post of I.G.B.C.W. was converted to I.G. Projects in February 1917.

1917-1918.

Minister of Public Works	Sir Ismail Pasha Sirry.
Adviser-U.S.S. P.W.M.	Sir Murdoch MacDonald.
I.G. Headquarters	P. M. Tottenham.
I.G.I. Upper Egypt	G. B. Ireland (resigned).
I.G.I. Lower Egypt	A. M. Adamson.
I.G. Projects	H. W. Molesworth.

1918-1919.

Minister of Public Works	Sir Ismail Pasha Sirry.
Adviser-U.S.S. P.W.M.	Sir Murdoch MacDonald.
I.G. Headquarters	P. M. Tottenham.
I.G.I. Upper Egypt	P. R. Boxwell.
I.G.I. Lower Egypt	A. M. Adamson.
I.G. Projects	H. W. Molesworth.

1919-1920.

Minister of Public Works	Hassan Pasha Hassib.
	Sir Ismail Pasha Sirry.
	Mohamad Pasha Shafik.
Adviser-U.S.S. P.W.M.	Sir Murdoch MacDonald.
I.G. Headquarters	P. M. Tottenham.
I.G.I. Upper Egypt	P. R. Boxwell.
I.G.I. Lower Egypt	A. M. Adamson.
I.G. Projects	H. W. Molesworth.

1920-1921.

Minister of Public Works	Mohammad Pasha Shafik.
Adviser	Sir Murdoch MacDonald.
U.S.S. P.W.M.	P. M. Tottenham.
Asst. U.S.S.	H. W. Molesworth.
I.G.I. Upper Egypt	P. R. Boxwell.
I.G.I. Lower Egypt	A. M. Adamson.
I.G. Projects	L. N. Cooper.

1921-1922.

Minister of Public Works	Mohamad Pasha Shafik. Hussein Pasha Wassif.
Adviser	Sir Murdoch MacDonald (resigned).
U.S.S. P.W.M.	P. M. Tottenham. Abdel Hamid Pasha Suliman.
Asst. U.S.S.	H. W. Molesworth.
I.G.I. Upper Egypt	P. R. Boxwell.
I.G.I. Lower Egypt	A. M. Adamson.
I.G. Projects	L. N. Cooper.

1922-1923.

Minister of Public Works	Hussein Pasha Wassef. Ismail Pasha Sirry. Hafez Pasha Hassan.
Under Secretary of State	P. M. Tottenham. Abdel Hamid Pasha Suliman.
Asst. U.S.S.	H. W. Molesworth.
I.G.I. Upper Egypt	P. R. Boxwell.
I.G.I. Lower Egypt	A. M. Adamson.
I.G. Sudan	L. N. Cooper.

1923-1924.

Minister of Public Works	Hafez Pasha Hassan. Abdel Hamid Pasha Suliman. Morcos Pasha Hanna.
Under Secretary of State	P. M. Tottenham. Abdel Hamid Pasha Suliman. Mohamad Pasha Zaghloul.
Asst. U.S.S.	H. W. Molesworth. P. R. Boxwell.
I.G.I. Upper Egypt	Mohamad Pasha Baligh.
I.G.I. Lower Egypt (Act.)	W. D. L. Roberts. L. F. P. De Smidt.
I.G. Sudan	W. D. L. Roberts.

1924-1925.

Minister of Public Works	Morcos Pasha Hanna. Osman Bey Moharram. Mahmud Pasha Sidky. Ismail Pasha Sirry.
Under Secretary of State	P. M. Tottenham. Mohamad Pasha Zaghloul. Osman Bey Moharram. Saleh Pasha Enan.
Asst. Under Secretary of State	P. R. Boxwell.
I.G.I. Upper Egypt	Mohamad Pasha Baligh.
I.G.I. Lower Egypt	Ibrahim Bey Fahmy.
I.G. Sudan	W. D. L. Roberts.

1925-1926.

Minister of Public Works	Ismail Pasha Sirry.
Under Secretary of State	Saleh Pasha Enan.
Asst. U.S.S.	Hussein Bey Sirry.
I.G.I. Upper Egypt	Kamel Osman Ghaleb Bey.
I.G.I. Lower Egypt	Ibrahim Bey Fahmy.
I.G. Sudan	W. D. L. Roberts.

APPENDIX “P.”

ADMINISTRATIVE DIVISIONS.

1884.

The Administrative Divisions of the country were as follows :—

First Circle : Eastern Delta.

Second Circle : Central Delta and Delta Barrage.

Third Circle : Western Delta, Gîza, Faiyûm.

Fourth Circle : Beni Souef, Minya, Asyût, Girga.

Fifth Circle : Qena, Esna.

1890.

Faiyûm Province transferred to Fourth Circle.

Girga Directorate formed.

Delta Barrage Directorate formed.

1892.

Girga Directorate enlarged.

1898.

Projects Circle formed under an Inspector responsible to Inspector General of Irrigation Upper Egypt.

1901.

Gîza Province transferred from Third Circle to Delta Barrage Directorate.

1903.

Aswân Reservoir Directorate formed.

Asyût Barrage Directorate formed.

1904.

Sudan Irrigation Service formed.

Zifta Circle formed.

1906.

Faiyûm Province detached from Fourth Circle and constituted a Circle.

Projects Circle detached from I.G.I. Upper Egypt.

1907.

Asyût Barrage Directorate constituted a Circle.

Girga Directorate constituted a Circle.

Delta Barrage Directorate constituted a Circle.

Inspectorate General, Basin Conversion Works, formed.

1908.

Zifta Circle enlarged.

1912.

Gîza Province detached from Delta Barrage and constituted a Circle under I.G.I. Upper Egypt. The Delta Barrage reverted to the status of Directorate.

Central Gharbiya Drainage Department and Beheira Drainage Department formed.

1914.

Sudan Divisions came under the direct control of the Under Secretary of State on the suppression of the post of I.G. Sudan.

1917.

Central Gharbiya and Beheira Drainage Departments, renamed Central Delta Projects and Western Delta Projects respectively, were placed under Control of I.G. Projects (*ex* I.G.B.C.W.).

1920.

Eastern Delta Division and Upper Egypt Projects and Concessions were formed as branches of the Projects.

1922.

Sudan Divisions reorganized and replaced under control of an Inspector General.

1923.

- (1) Projects Inspectorate General suppressed and Project Branches merged with Irrigation Circles.
- (2) Giza and 3rd Circles boundaries delimited.

1925.

- (1) Nag Hammadi Projects Circle reconstituted.
- (2) Giza and Faiyûm Irrigation Circles merged together with headquarters at Faiyûm.

APPENDIX "Q."

Cultivated Area and Summer Crops.

YEAR.	Cultivated Area.	COTTON.					Rice Area.
		Area.	Crop.	Yield Qantârs per Feddân.	Middle Price.	Total Value of Crop.	
	Feddâns.	Feddâns.	Qantârs.		L.E. M.	L.E.	Feddâns.
1884	—	—	3,629,000	—	3·00	12,808,000	—
1885	—	—	2,792,000	—	2·70	8,869,000	—
1886	—	—	2,872,000	—	2·56	8,650,000	—
1887	—	—	2,996,000	—	2·48	8,741,000	—
1888	—	—	2,723,000	—	2·72	8,714,000	—
1889	—	—	3,238,000	—	2·68	10,209,000	—
1890	—	—	4,159,000	—	2·27	11,107,000	—
1891	—	—	4,765,000	—	1·78	9,978,000	—
1892	—	—	5,221,000	—	1·87	11,486,000	—
1893	—	—	5,033,000	—	1·78	10,540,000	—
1894	—	—	4,619,000	—	1·92	10,428,000	159,000
1895	—	998,000	5,276,000	5·29	2·24	13,426,000	147,000
1896	—	1,051,000	5,879,000	5·60	2·02	13,696,000	166,000
1897	—	1,128,000	6,544,000	5·80	1·58	12,294,000	185,000
1898	5,088,000	1,121,000	5,588,000	4·98	1·78	11,967,000	119,000
1899	5,186,000	1,153,000	6,510,000	5·64	2·45	18,664,000	152,000
1900	5,231,000	1,230,000	5,435,000	4·42	2·76	17,503,000	38,000
1901	5,267,000	1,250,000	6,370,000	5·10	2·08	16,137,000	55,000
1902	5,335,000	1,276,000	5,839,000	4·58	2·73	18,471,000	80,000
1903	5,224,000	1,333,000	6,509,000	4·88	3·33	24,267,000	126,000
1904	5,377,000	1,437,000	6,313,000	4·39	2·79	20,159,000	141,000
1905	5,404,000	1,567,000	5,960,000	3·80	3·20	21,704,000	173,000
1906	5,340,000	1,506,000	6,949,000	4·61	3·83	30,083,000	143,000
1907	5,403,000	1,603,000	7,235,000	4·51	3·64	30,115,000	156,000
1908	5,327,000	1,640,000	6,751,000	4·12	3·09	24,564,000	171,000
1909	5,374,000	1,597,000	5,001,000	3·13	4·66	26,508,000	204,000
1910	5,345,000	1,643,000	7,505,000	4·57	4·13	35,667,000	233,000
1911	5,264,000	1,711,000	7,386,000	4·32	3·45	29,893,000	192,000
1912	5,285,000	1,722,000	7,499,000	4·35	3·65	32,107,000	201,000
1913	5,283,000	1,723,000	7,664,000	4·44	3·80	33,827,000	211,000
1914	5,023,000	1,755,000	6,451,000	3·67	2·40	18,567,000	22,000
1915	5,309,000	1,186,000	4,775,000	4·02	3·86	22,249,000	299,000
1916	5,232,000	1,656,000	5,060,000	3·06	7·56	42,843,000	124,000
1917	5,319,000	1,677,000	6,293,000	3·75	7·70	52,765,000	232,000
1918	5,282,000	1,316,000	4,821,000	3·66	7·44	39,459,000	341,000
1919	5,298,000	1,574,000	5,572,000	3·54	17·56	107,057,000	125,000
1920	5,305,000	1,828,000	—	—	—	—	135,000

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